

144 MHz FM HAND HELD TRANSCEIVER

**DJ-120T/E****Service Manual****Index**

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# ■ SPECIFICATIONS

## <GENERAL>

Frequency coverage	144.0–147.995 MHz (DJ-120T)	
	144.0–145.995 MHz (DJ-120E)	
Frequency step	5 kHz (800 channels) (DJ-120T)	
	12.5 kHz (160 channels) (DJ-120E)	
Emission type	16F3 (FM)	
Antenna Impedance	50 ohms, unbalanced	
Operating voltage	5.5 to 12 vdc	
Operating Current		
(typical at 7.2 vdc)	Battery save	15 mA
	Squelched	42 mA
	Max. audio out	98 mA
	Transmit HI	750 mA
	Transmit LO	350 mA
Battery charging time	14–16 hours	
Dimensions	6 <sup>5</sup> / <sub>8</sub> " (H) × 2 <sup>3</sup> / <sub>8</sub> " (W) × 1 <sup>3</sup> / <sub>16</sub> " (D)	
Weight:	0.55 lbs.	

## <RECEIVER>

Type	Dual conversion;
	1st IF 21.6 MHz; 2nd IF 455 kHz
Sensitivity:	Less than .25 µV @12 dB SINAD
Spurious response Rejection ratio	More than 60 dB
Selectivity:	More than ±7.5 kHz at –6 dB
	Less than ±15 kHz at –60 dB
Squelch sensitivity:	Less than –12 dB
Audio output	More than 200 mW (10% THD), 8 ohms

## <TRANSMITTER>

Output power	See table
Modulation	Variable reactance FM
Maximum deviation	±5 kHz
Harmonic suppression:	–60 dB
Microphone:	Built-in electret condenser
Operating modes:	Simplex
	Shifted + or –600 kHz from receive frequency

**RF POWER OUTPUT TABLE**

Battery	HI	LO
EBP-6NAZ	4.5 W	600 mW
EBP-7NAZ	2.5 W	450 mW
EBP-8NAZ	6.5 W	850 mW
EBP-9NA	2.5 W	450 mW

Specifications subject to change without notice.



# PARTS LIST

Ref. No.	Part Code	Part Name and Number
<b>SW Unit</b>		
D1	EL0003	LCD, EL0003
SW1	XD0071	Diode, FMP1
SW6	UU0007	Tact SW, EVQ-QEC 04K
RV1	UQ0011	Push SW, ESB-64601
	RV0011A	VR, V108-1 (PVB) S (SJ)
	UP0179	13-1FF15A10K
		SUB SW P.C.B.
<b>CPU Unit</b>		
IC101	XA0100	IC, $\mu$ PD7502G
IC102	XA0059	IC, BA6993
Q101	XE0004	F.E.T., 2SK208GR
D101	XD0071	Diode, FMP1
D102	XD0071	Diode, FMP1
D103	XD0071	Diode, FMP1
D104	XD0040	Diode, DAN 202K
D105	XD0109	Zener, RLZJ 5.1BJB
D106	XD0080	Diode, RB4000
D107	XD0080	Diode, RB4000
D2	XL0016	LED SLM-13MW (T only)
D3	XL0016	LED SLM-13MW (T only)
SW101	UU0007	Tact SW, EVQ-QEC 04K
SW102	US0012	Slide SW, SSSS 21382A
SW103	UU0007	Tact SW, EVQ-QEC 04K
SW104	UU0005	Tact SW, EVQQR02K
SW105	UU0008	Tact SW, SKHMPD1
	UP0181	CPU P.C.B.
MC101	EY0003	Mic, EM-5B
SP101	ES0005	SP, 038S13D
BT101	ED0002	Li Batt, 9R1225-1VF
C101	CU3035	Chip C., CM105W5R102K50VAT
C102	CU3017	Chip C., CM105CH330K50VAT
C103	CU3035	Chip C., CM105W5R102K50VAT
C104	CU3035	Chip C., CM105W5R102K50VAT
C105	CU3035	Chip C., CM105W5R102K50VAT
C106	CU3052	Chip C., CM105W5R103K25VAT
C107	CU3035	Chip C., CM105W5R102K50VAT
C108	CS0051	Chip Tantal, TMC 1C106 TR
C109	CU3052	Chip C., CM105W5R103K25VAT
C110	CU3052	Chip C., CM105W5R103K25VAT
C111	CU3052	Chip C., CM105W5R103K25VAT
C112	CU3052	Chip C., CM105W5R103K25VAT
C113	CU3052	Chip C., CM105W5R103K25VAT
C114	CS0053	Chip Tantal, TMC 0J476 TR
C115	CU3035	Chip C., CM105W5R102K50VAT
C116	CU3035	Chip C., CM105W5R102K50VAT
C161	CU3035	Chip C., CM105W5R102K50VAT
C162	CU3035	Chip C., CM105W5R102K50VAT
C163	CU3035	Chip C., CM105W5R102K50VAT
R101	RK3050	Chip R., MCR03 10 k $\Omega$
R102	RK3050	Chip R., MCR03 47 k $\Omega$
R103	RK3101	Chip R., MCR03 160 k $\Omega$
R104	RK3050	Chip R., MCR03 47 k $\Omega$
R105	RK3050	Chip R., MCR03 47 k $\Omega$
R106	RK3050	Chip R., MCR03 47 k $\Omega$
R107	RK3050	Chip R., MCR03 47 k $\Omega$
R108	RK3050	Chip R., MCR03 10 k $\Omega$
R109	RK3050	Chip R., MCR03 10 k $\Omega$
R110	RK3050	Chip R., MCR03 10 k $\Omega$
R111	RK3050	Chip R., MCR03 47 k $\Omega$
R112	RK3082	Chip R., MCR03 100 k $\Omega$
R113	RK3082	Chip R., MCR03 220 k $\Omega$
R114	RK3050	Chip R., MCR03 10 k $\Omega$
R115	RK3050	Chip R., MCR03 10 k $\Omega$
R116	RK3050	Chip R., MCR03 10 k $\Omega$
R117	RK3050	Chip R., MCR03 10 k $\Omega$
R118	RK3082	Chip R., MCR03 100 k $\Omega$
R119	RK3046	Chip R., MCR03 4.7 k $\Omega$
R120	RK3074	Chip R., MCR03 1 M $\Omega$
R121	RK3050	Chip R., MCR03 47 k $\Omega$

Ref. No.	Part Code	Part Name and Number
R122	RK3054	Chip R., MCR03 22 k $\Omega$
R123	RK3088	Chip R., MCR03 220 k $\Omega$
R124	RK3056	Chip R., MCR03 33 k $\Omega$
R125	RK3034	Chip R., MCR03 470 $\Omega$
R126	RK3001	Chip R., MCR03 0 $\Omega$
R127	RK3052	Chip R., MCR03 15 k $\Omega$
R128	RK3050	Chip R., MCR03 10 k $\Omega$
R129	RK3050	Chip R., MCR03 10 k $\Omega$
R130	RK3050	Chip R., MCR03 10 k $\Omega$
R131	RK3014	Chip R., MCR03 10 $\Omega$
R132	RK3030	Chip R., MCR03 220 $\Omega$
R133	RK3051	Chip R., MCR03 12 k $\Omega$
R134	RK3062	Chip R., MCR03 100 k $\Omega$
R135	RK3082	Chip R., MCR03 100 k $\Omega$
R136	RK3082	Chip R., MCR03 100 k $\Omega$
R137	RK3031	Chip R., MCR03 270 $\Omega$
R138	RK3031	Chip R., MCR03 270 $\Omega$
R139	RK3052	Chip R., MCR03 15 k $\Omega$
R140	RK3001	Chip R., MCR03 0 $\Omega$ (E only)
R146	RK3001	Chip R., MCR03 0 $\Omega$
R161	RK3001	Chip R., MCR03 0 $\Omega$ (T only)
R162	RK3001	Chip R., MCR03 0 $\Omega$ (T only)
<b>AF Unit</b>		
IC201	XA0061	IC, NJM385M
IC202	XA0068	IC, M5218FP-T01-1
Q201	XT0038	Transistor, 2SA1037KR
Q202	XT0037	Transistor, 2SC2412KR
Q203	XT0061	Transistor, 2SB1132Q T100
Q204	XT0037	Transistor, 2SC2412KR
Q205	XT0057	Transistor, 2SB1184F5Q T200
Q206	XT0037	Transistor, 2SC2412KR
Q207	XT0037	Transistor, 2SC2412KR
Q208	XE0064	F.E.T., 2SK208GR
Q209	XT0038	Transistor, 2SA1037KR
Q210	XT0037	Transistor, 2SC2412KR
Q211	XT0038	Transistor, 2SA1037KR
Q212	XT0037	Transistor, 2SC2412KR
Q213	XT0061	Transistor, 2SB1132Q T100
Q214	XT0058	Transistor, 2SD1760F5Q T200
D201	XD0117	Zener, 05A25.8X
D202	XD0079	Zener, RLZ6.8A TE11
TH201	X80001	Thermistor, TD5-C225D
CN201	UE0032	Connector, 10FM-1.0ST
CN202	UE0032	Connector, 10FM-1.0ST
CN203	UE0126	Connector, 10FM-1.0SG-1
CN204	UE0126	Connector, 10FM-1.0SG-1
C201	CS0051	Chip Tantal, TMC 1C106 TR
C202	CU3031	Chip C., CM105W5R471K50VAT
C203	CU3031	Chip C., CM105W5R471K50VAT
C204	CU3031	Chip C., CM105W5R471K50VAT
C205	CU3031	Chip C., CM105W5R471K50VAT
C206	CU3031	Chip C., CM105W5R471K50VAT
C207	CU3031	Chip C., CM105W5R471K50VAT
C208	CU8003	Chip C., C2012Y5V1E104ZT
C209	CU3031	Chip C., CM105W5R471K50VAT
C210	CU3031	Chip C., CM105W5R471K50VAT
C211	CU3031	Chip C., CM105W5R471K50VAT
C212	CU8003	Chip C., C2012Y5V1E104ZT
C213	CS0051	Chip Tantal, TMC 1C106 TR
C214	CU3052	Chip C., CM105W5R103K25VAT
C215	CS0049	Chip Tantal, TMC 1C105 TR
C216	CS0053	Chip Tantal, TMC 0J476 TR
C217	CS0053	Chip Tantal, TMC 0J476 TR
C218	CU8003	Chip C., C2012Y5V1E104ZT
C219	CS0053	Chip Tantal, TMC 0J476 TR
C220	CS0053	Chip Tantal, TMC 0J476 TR
C221	CU3052	Chip C., CM105W5R103K25VAT
C222	CU8003	Chip C., C2012Y5V1E104ZT
C223	CU8003	Chip C., C2012Y5V1E104ZT
C224	CU3054	Chip C., CM105W5R223K25VAT

Ref. No.	Part Code	Part Name and Number
C225	CU3054	Chip C., CM105W5R223K25VAT
C226	CS0049	Chip Tantal, TMC 1C105 TR
C228	CU3019	Chip C., CM105CH470K50VAT
C230	CU8003	Chip C., C2012Y5V1E104ZT
C231	CS0052	Chip Tantal, TMC 1A336 TR
C232	CU3031	Chip C., CM105W5R471K50VAT
C233	CS0051	Chip Tantal, TMC 1C106 TR
C234	CU3035	Chip C., CM105W5R102K50VAT
C235	CU3024	Chip C., CM105CH121K50VAT
C236	CU3039	Chip C., CM105W5R222K50VAT
C238	CS0049	Chip Tantal, TMC 1C105 TR
C239	CU3031	Chip C., CM105W5R471K50VAT
C241	CU3031	Chip C., CM105W5R471K50VAT
C242	CU3052	Chip C., CM105W5R109K25VAT
R201	RK3050	Chip R., MCR03 10 k $\Omega$
R202	RK3042	Chip R., MCR03 2.2 k $\Omega$
R203	RK3050	Chip R., MCR03 10 k $\Omega$
R204	RK3050	Chip R., MCR03 10 k $\Omega$
R205	RK3050	Chip R., MCR03 10 k $\Omega$
R206	RK3050	Chip R., MCR03 10 k $\Omega$
R207	RK3038	Chip R., MCR03 1 k $\Omega$
R208	RK3050	Chip R., MCR03 10 k $\Omega$
R209	RK3034	Chip R., MCR03 470 $\Omega$
R210	RK3042	Chip R., MCR03 2.2 k $\Omega$
R211	RK0105	Chip R., MCR10 2.2 $\Omega$
R212	RK3038	Chip R., MCR03 1 k $\Omega$
R213	RK3044	Chip R., MCR03 3.3 k $\Omega$
R214	RK3050	Chip R., MCR03 10 k $\Omega$
R215	RK3050	Chip R., MCR03 10 k $\Omega$
R216	RK3046	Chip R., MCR03 4.7 k $\Omega$
R217	RK3050	Chip R., MCR03 10 k $\Omega$
R218	RK3050	Chip R., MCR03 10 k $\Omega$
R219	RK3046	Chip R., MCR03 4.7 k $\Omega$
R220	RK3042	Chip R., MCR03 2.2 k $\Omega$
R221	RK3050	Chip R., MCR03 10 k $\Omega$
R222	RK3050	Chip R., MCR03 10 k $\Omega$
R223	RK3044	Chip R., MCR03 3.3 k $\Omega$
R224	RK3050	Chip R., MCR03 10 k $\Omega$
R225	RK0105	Chip R., MCR10 2.2 $\Omega$
R226	RK3038	Chip R., MCR03 1 k $\Omega$
R227	RK3046	Chip R., MCR03 4.7 k $\Omega$
R228	RK0105	Chip R., MCR10 2.2 $\Omega$
R229	RK3051	Chip R., MCR03 12 k $\Omega$
R230	RK3050	Chip R., MCR03 47 k $\Omega$
R231	RK3082	Chip R., MCR03 100 k $\Omega$
R232	RK3050	Chip R., MCR03 10 k $\Omega$
R233	RK3020	Chip R., MCR03 33 $\Omega$
R236	RK3057	Chip R., MCR03 39 k $\Omega$
R237	RK3074	Chip R., MCR03 1 M $\Omega$
R238	RK3062	Chip R., MCR03 100 k $\Omega$
R239	RK3062	Chip R., MCR03 100 k $\Omega$
R240	RK3050	Chip R., MCR03 10 k $\Omega$
R241	RK3062	Chip R., MCR03 100 k $\Omega$
R242	RK3062	Chip R., MCR03 15 k $\Omega$
R243	RK3056	Chip R., MCR03 33 k $\Omega$
R244	RK3061	Chip R., MCR03 82 k $\Omega$
R245	RK3061	Chip R., MCR03 82 k $\Omega$
R246	RK3050	Chip R., MCR03 47 $\Omega$
R247	RK0107	Chip R., MCR10 0 $\Omega$
<b>Main Unit</b>		
IC301	XA0044	IC, M57799MA
IC302	XA0064	IC, MB1504
IC303	XA0063	IC, MC3357D
Q301	XT0036	Transistor, 2SC2413AP
Q302	XT0037	Transistor, 2SC2412KR
Q303	XT0037	Transistor, 2SC2412KR
Q304	XT0059	Transistor, 2SC3082KQ T96
Q305	XT0048	Transistor, 2SC3357
Q306	XT0059	Transistor, 2SC3082KQ T96
Q307	XT0037	Transistor, 2SC2412KR
Q308	XT0038	Transistor, 2SA1037KR
Q309	XT0037	Transistor, 2SC2412KR
Q310	XT0036	Transistor, 2SC2413AP



Ref. No.	Part Code	Part Name and Number
Q311	XT0036	Transistor, 2SC2413AP
D301	XD0078	Diode, DAN235K T96
D303	XD0038	Diode, 1SS133
D304	XD0080	Diode, RB400D T96
D306	XD0080	Diode, RB400D T96
D307	XD0080	Diode, RB400D T96
D308	XD0080	Diode, RB400D T96
D309	XD0080	Diode, RB400D T96
D310	XD0108	Diode, MA704TX
X301	XQ0022	X'tal, UM-1 12.6 MHz
X302	XQ0023	X'tal, UM-1 22.055 MHz
FL301	XC0004	Ceramic Filter, CFUM455E
CD301	XK0001	Ceramic Discr, CDB455G7
RV301	RH0031	Trimmer R., CVR-42A-103AW1D
RV302	RH0031	Trimmer R., CVR-42A-103AW1D
RV303	RH0031	Trimmer R., CVR-42A-103AW1D
CV301	CT0012	Trimmer C., CTZ-10A
L301	QC0009	Chip Inductor, MLF3216DR10M
L302	QC0009	Chip Inductor, MLF3216DR10M
L303	QK0035	Coil, 7T 1.5Ω
B301	QB0003	Ferrite B., OP-2.52-1.2H
B302	QB0003	Ferrite B., OP-2.52-1.2H
B301	UB0013	Slide Switch, ESD1111213
CN301	UE0031	Connector, 10FM-1.0BT
CN302	UE0031	Connector, 10FM-1.0BT
CN303	UE0030	Connector, TZL-P05P-A1
CN304	UE0031	Connector, 10FM-1.0BT
	UP0104A	Main P.C.B.
C301	CU3082	Chip C., CM105W5R103K25VAT
C302	CU3082	Chip C., CM105W5R103K25VAT
C303	CU3051	Chip C., CM105W5R471K50VAT
C304	CU3051	Chip C., CM105W5R471K50VAT
C305	CU3017	Chip C., CM105CH330K50VAT
C306	CU0003	Chip C., C2012Y5V1E104ZT
C307	CU3031	Chip C., CM105W5R471K50VAT
C308	CU3031	Chip C., CM105W5R471K50VAT
C310	CU3019	Chip C., CM105CH470K50VAT
C311	C80049	Chip Tantal, TMC 1C105 TR
C312	CU3031	Chip C., CM105W5R471K50VAT
C313	CU3031	Chip C., CM105W5R471K50VAT
C314	C80049	Chip Tantal, TMC 1C105 TR
C315	CU3019	Chip C., CM105CH150K50VAT
C316	CU3010	Chip C., CM105CH080C50VAT
C317	CU3017	Chip C., CM105CH330K50VAT
C318	CU3029	Chip C., CM105CH101K50VAT
C319	CU3031	Chip C., CM105W5R471K50VAT
C320	CU0003	Chip C., C2012Y5V1E104ZT
C321	CU3014	Chip C., CM105CH180K50VAT
C322	CU3018	Chip C., CM105CH380K50VAT
C323	CU3023	Chip C., CM105CH101K50VAT
C324	CU3023	Chip C., CM105CH101K50VAT
C326	CU3031	Chip C., CM105W5R471K50VAT
C327	C80049	Chip Tantal, TMC 1C105 TR
C328	CU3082	Chip C., CM105W5R103K25VAT
C329	CU9009	Chip C., C3278 1H0.01UB
C330	CU3011	Chip C., CM105CH100K50VAT
C331	CU3035	Chip C., CM105W5R102K50VAT
C332	CU3035	Chip C., CM105W5R102K50VAT
C333	C83035	Chip C., CM105W5R102K50VAT
C334	CU3035	Chip C., CM105W5R102K50VAT
C335	CU0003	Chip C., C2012Y5V1E104ZT
C336	CU3052	Chip C., CM105W5R103K25VAT
C337	CU0003	Chip C., C2012Y5V1E104ZT
C338	CU3082	Chip C., CM105W5R103K25VAT
C339	CU3052	Chip C., CM105W5R103K25VAT

Ref. No.	Part Code	Part Name and Number
C340	C80023	Chip Tantal, TMC 0J108 TR
C341	CU3031	Chip C., CM105W5R471K50VAT
C342	CU3023	Chip C., CM105CH101K50VAT
C343	CU3024	Chip C., CM105CH121K50VAT
C344	CU0003	Chip C., C2012Y5V1E104ZT
C345	CU0003	Chip C., C2012Y5V1E104ZT
C346	CU0003	Chip C., C2012Y5V1E104ZT
C347	C80023	Chip Tantal, TMC 0J108 TR
C348	CU3029	Chip C., CM105CH580K50VAT
C349	CU3029	Chip C., CM105CH580K50VAT
C350	CU3031	Chip C., CM105W5R471K50VAT
C351	CU3013	Chip C., CM105CH150K50VAT
C352	C80089	Chip Tantal, TMC 1A475 TR
C353	CU3017	Chip C., CM105CH330K50VAT
C355	CU0003	Ceramic C., SA055C 222K Chip C., C2012 B1H 222K
R301	RK3043	Chip R., MCR03 2.7 kΩ
R302	RK3058	Chip R., MCR03 47 kΩ
R303	RK3028	Chip R., MCR03 100Ω
R304	RK3054	Chip R., MCR03 22 kΩ
R305	RK3082	Chip R., MCR03 100 kΩ
R306	RK3058	Chip R., MCR03 47 kΩ
R307	RK3038	Chip R., MCR03 1 kΩ
R308	RK3038	Chip R., MCR03 1 kΩ
R309	RK3038	Chip R., MCR03 1 kΩ
R310	RK3042	Chip R., MCR03 2.2 kΩ
R311	RK3042	Chip R., MCR03 2.2 kΩ
R312	RK3022	Chip R., MCR03 47Ω
R313	RK3022	Chip R., MCR03 47Ω
R314	RK3038	Chip R., MCR03 1 kΩ
R315	RK3032	Chip R., MCR03 330Ω
R316	RK6105	Chip R., MCR10 2.2Ω
R317	RK3027	Chip R., MCR03 120Ω
R318	RK0011	Chip R., MCR10 47Ω
R319	RK3030	Chip R., MCR03 220Ω
R321	RK3090	Chip R., MCR03 10 kΩ
R322	RK3044	Chip R., MCR03 3.3 kΩ
R323	RK3082	Chip R., MCR03 100 kΩ
R324	RK3082	Chip R., MCR03 100 kΩ
R325	RK3038	Chip R., MCR03 1 kΩ
R326	RK3082	Chip R., MCR03 100 kΩ
R327	RK3038	Chip R., MCR03 1 kΩ
R328	RK3038	Chip R., MCR03 1 kΩ
R329	RK3038	Chip R., MCR03 1 kΩ
R330	RK3080	Chip R., MCR03 10 kΩ
R331	RK3080	Chip R., MCR03 10 kΩ
R333	RK3080	Chip R., MCR03 10 kΩ
R334	RK3080	Chip R., MCR03 10 kΩ
R335	RK3038	Chip R., MCR03 1 kΩ
R336	RK3080	Chip R., MCR03 10 kΩ
R337	RK3088	Chip R., MCR03 47 kΩ
R338	RK3088	Chip R., MCR03 47 kΩ
R339	RK3090	Chip R., MCR03 10 kΩ
R340	RK3082	Chip R., MCR03 100 kΩ
R341	RK3080	Chip R., MCR03 10 kΩ
R342	RK3074	Chip R., MCR03 1 MΩ
R343	RK3090	Chip R., MCR03 10 kΩ
R344	RK3038	Chip R., MCR03 1 kΩ
R345	RK3048	Chip R., MCR03 4.7 kΩ
R346	RK3088	Chip R., MCR03 220 kΩ
R347	RK3034	Chip R., MCR03 470Ω
R348	RK3048	Chip R., MCR03 4.7 kΩ
R349	RK3038	Chip R., MCR03 1 kΩ
R350	RK3058	Chip R., MCR03 47 kΩ
R351	RK3040	Chip R., MCR03 1.5 kΩ
R352	RK3040	Chip R., MCR03 1.5 kΩ
R353	RK3058	Chip R., MCR03 47 kΩ
R354	RK3040	Chip R., MCR03 1.5 kΩ
R355	RK3028	Chip R., MCR03 100Ω
R356	RK3088	Chip R., MCR03 220 kΩ
R357	RK3042	Chip R., MCR03 2.2 kΩ
R358	RK3088	Chip R., MCR03 220 kΩ
R359	RK3042	Chip R., MCR03 2.2 kΩ
R360	RK3028	Chip R., MCR03 100Ω

Ref. No.	Part Code	Part Name and Number
R361	RK3054	Chip R., MCR03 22 kΩ
R362	RK3028	Chip R., MCR03 180Ω
R363	RK3022	Chip R., MCR03 47Ω
R364	RK3022	Chip R., MCR03 47Ω
<b>RF Unit</b>		
Q401	XE0009	F.E.T., 2SK302GR
Q402	XE0009	F.E.T., 2SK302GR
Q403	XT0039	Transistor, 2SC3062KQ T96
D401	XD0086	Diode, RLS135
D402	XD0086	Diode, RLS135
D403	XD0086	Diode, RLS135
D404	XD0086	Diode, RLS135
D405	XD0012	Diode, 1SS97
D406	XD0073	Varicap, MA334B
D407	XD0073	Varicap, MA334B
D408	XD0012	Diode, 1SS97
D409	XD0073	Varicap, MA334B
D410	XD0073	Varicap, MA334B
D411	XD0012	Diode, 1SS97
D412	XD0012	Diode, 1SS97
D413	XD0012	Diode, 1SS97
D414	XD0040	DAN, 202K (E only)
IC401	XA0052	IC, 87116A
CN401	UJ0003	SP MIC Connector, HSJ1102-01-820
CN402	UE0032	Connector, 10FM-1.0BT
	UE0029	ANT Connector
SW401	UD0004	DIP, 9W 55G M7P (T only)
FL401	XF0001	X Filter, 21.6 MHz
X401	XB0001	Ceramic R., FAR-C40A-03580000-K01
RV401	RH0036	Trimmer R., CVR-42A-473 AW1D
L401	QK0035	Coil, 4T 2Ω
L402	QK0033	Coil, 7T 1.5Ω
L403	QK0034	Coil, 11T 1.5Ω
L404	QK0033	Coil, 7T 1.5Ω
L405	QA0013	Coil
L406	QA0013	Coil
L407	QC0010	Chip Inductor, MLF3218E100M
L408	QA0013	Coil
L409	QA0013	Coil
L410	QC0009	Chip Inductor, MLF3218DR10M
L411	QC0010	Chip Inductor, MLF3218E100M
R401	RK3074	Chip R., MCR03 1 MΩ
R402	RK3074	Chip R., MCR03 1 MΩ
R403	RK3018	Chip R., MCR03 22Ω
R404	RK3018	Chip R., MCR03 22Ω
R405	RK3074	Chip R., MCR03 1 MΩ
R406	RK3074	Chip R., MCR03 1 MΩ
R408	RK3034	Chip R., MCR03 470Ω
R409	RK3022	Chip R., MCR03 47Ω
R410	RK3080	Chip R., MCR03 10 kΩ
R411	RK3034	Chip R., MCR03 470Ω
R412	RK3038	Chip R., MCR03 1 kΩ
R413	RK3082	Chip R., MCR03 100 kΩ
R414	RK3048	Chip R., MCR03 4.7 kΩ
R415	RK3048	Chip R., MCR03 4.7 kΩ
R416	RK3001	Chip R., MCR03 0Ω (E only)
R419	RK3084	Chip R., MCR03 150 kΩ (E only)
R419	RK3001	Chip R., MCR03 0Ω (T only)
R420	RK3058	Chip R., MCR03 47 kΩ
R421	RK3001	Chip R., MCR03 0Ω (E only)
R421	RK3070	Chip R., MCR03 470 kΩ (T only)
R422	RK3034	Chip R., MCR03 470Ω (E only)
R426	RD0116	Jumper, JPW01 FC03 (E only)
R427	RD0116	Jumper, JPW01 FC03 (E only)





# ■ DISASSEMBLY INSTRUCTIONS

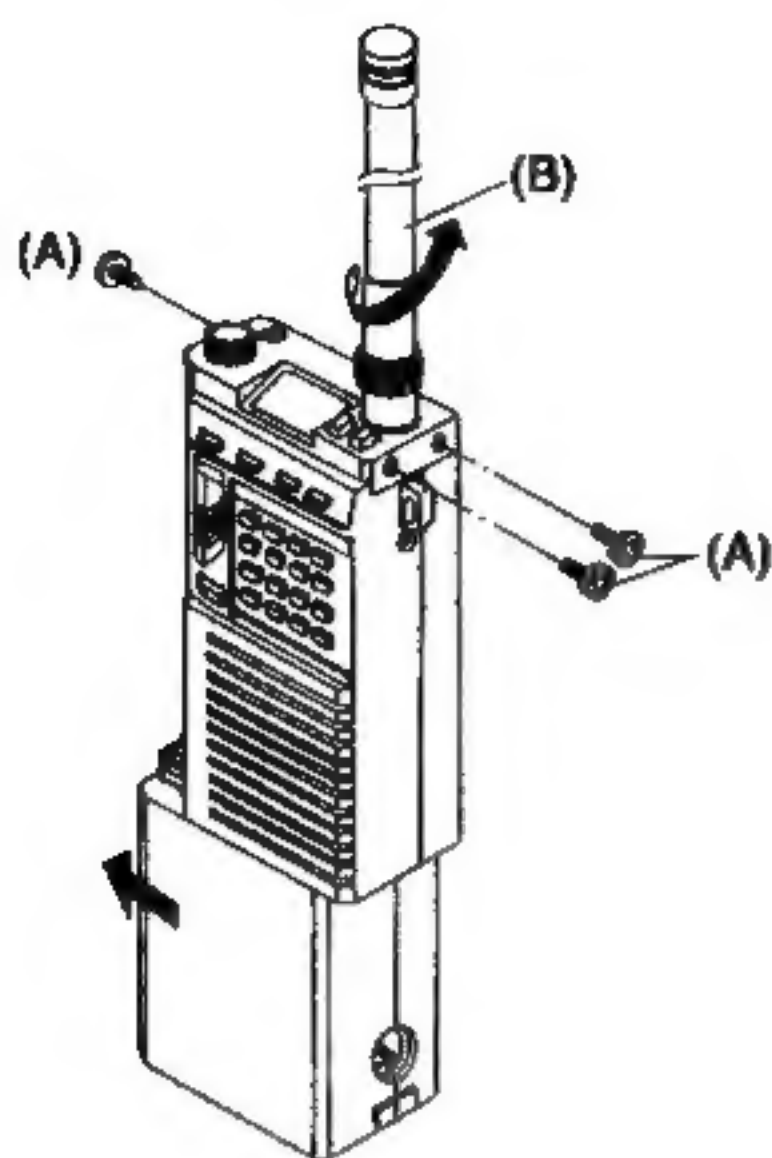


Fig. 1

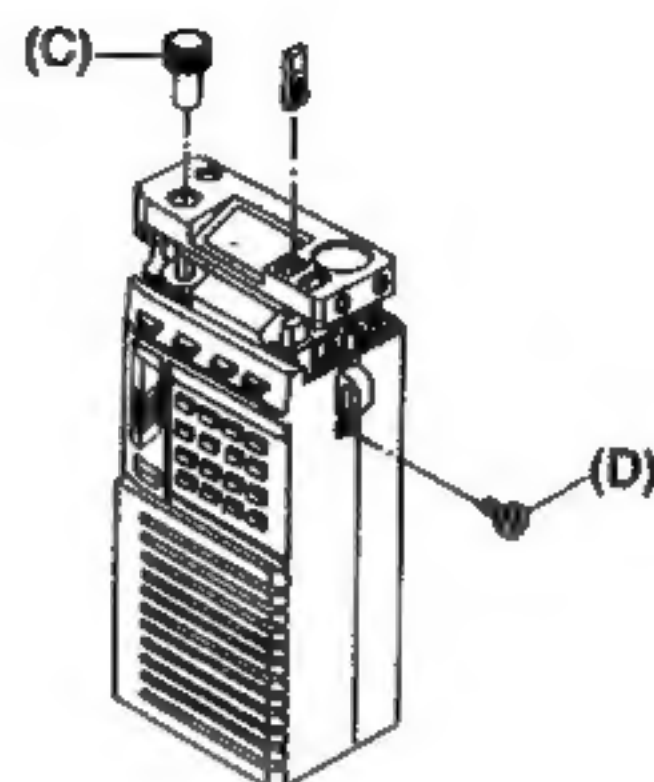


Fig. 2

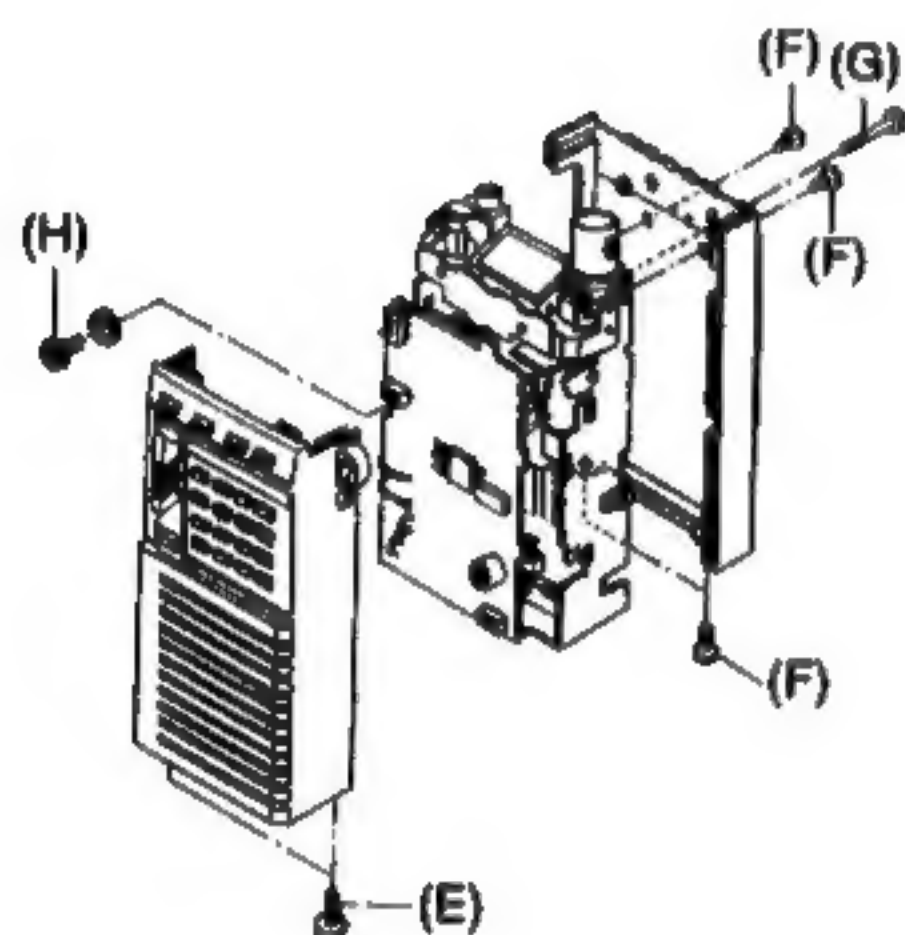


Fig. 3

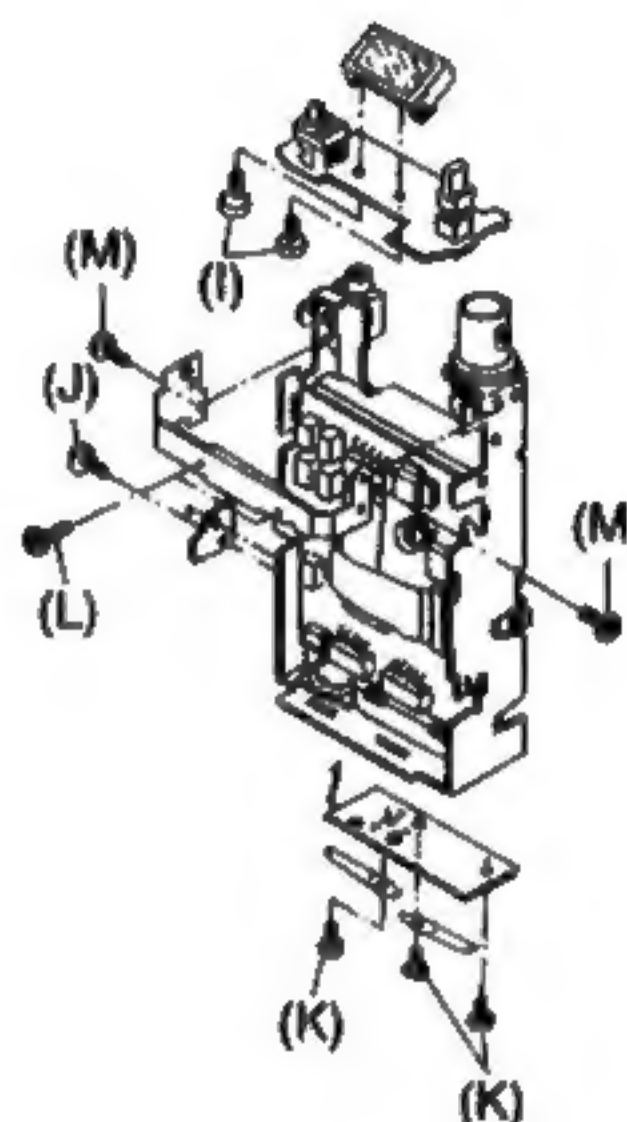
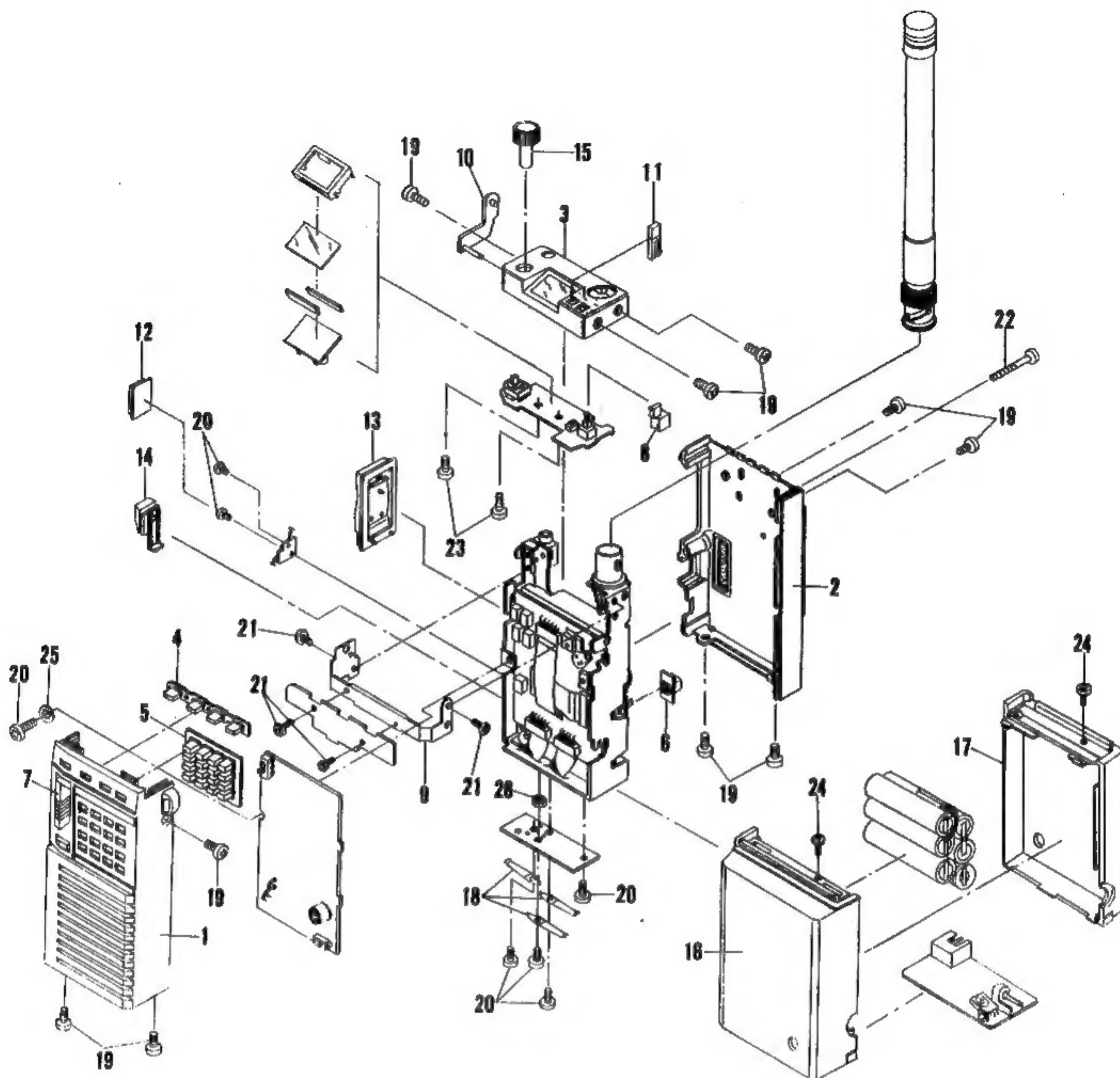


Fig. 4

Shown in Fig.—	To remove—	Remove—
1	Upper Panel	Screw ..... (A)×3
1	Upper Panel	Rubber Flex Antenna ..... (B)×1
2	Upper Panel	Volume Knob ..... (C)×1
2	Front Panel	Screw ..... (D)×1
3	Front Panel	Screw ..... (E)×2
3	Rear Panel	Screw ..... (F)×3
3	Rear Panel	Screw ..... (G)×1
3	CPU Board	Screw (and Washer) ..... (H)×1
4	LCD	Screw ..... (I)×2
4	Lamp (Tone) Board	Screw ..... (J)×2
4	Power Supply Terminal Board	Screw ..... (K)×3
4	Sub SW Board	Screw ..... (L)×2
4	Fixing Plate	Screw ..... (M)×2



# ■ CABINET PARTS LOCATION



Ref. No.	Part Code	Part Name and Number
<b>Mechanical Parts</b>		
1	KM0063	Front Case DJ-120T only
	KM0064	Front Case DJ-120E only
2	KB0027	Rear Case
3	KU0065	Upper Panel
4	FG0054	Key Pad
5	FG0032	Silicon Key (DJ-120T only)
6	NL0003	HI/LOW Knob
7	NL0004	F LOCK Knob
8	NP0012	SQL OFF Knob
9	SH0046	Fixing Plate
10	FG0021	EP Rubber
11	NB0033	CALL Knob
12	NB0016	LIGHT (TONE) Knob
13	NB0018	PTT Knob
14	NB0019	RELEASE Knob
15	NK0017	VOLUME Knob
16	KF0012	Ni-Cd Battery Case Cover
17	KD0018	Ni-Cd Battery Case
18	SP0001	Circuit Contact

Ref. No.	Part Code	Part Name and Number
<b>Screws</b>		
19	AF0007	M2×2.5
20	AF0003	M2×3
21	AF0006	M1.4×2
22	AP0003	M2×5
23	AP0004	M2×5
24	AF0008	M2×3.5
<b>Washer</b>		
25	AZ0015	W2
<b>Nut</b>		
26	AN0004	M2

# ■ ADJUSTMENT

## 1. Transmitting Unit

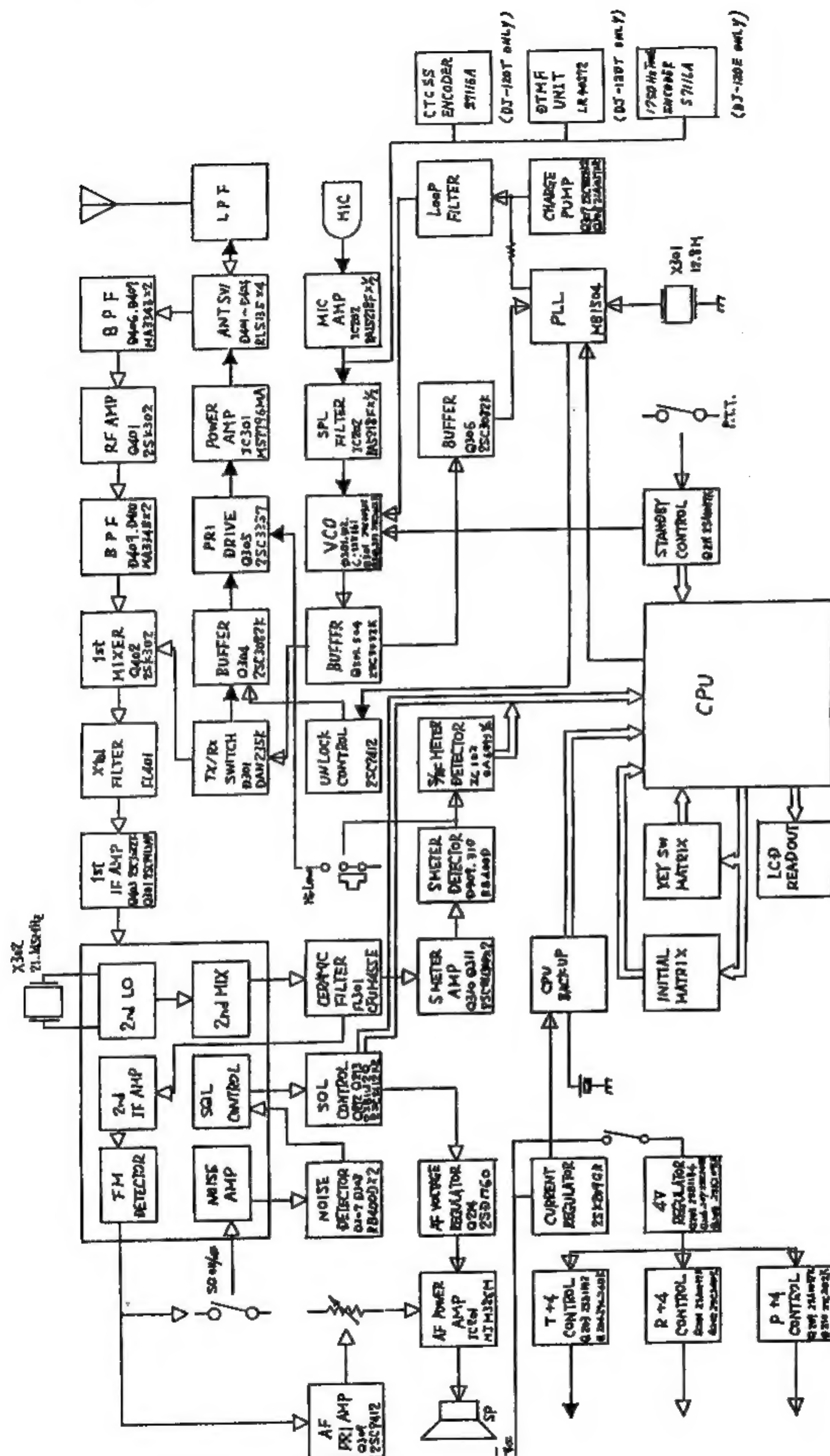
Item	Adjustment Point	Adjustment Method	Spec
1. Frequency adjustment	CV301 (Main PCB)	Set the unit in the transmission mode at 144.03 MHz and adjust CV301. (Transceiver tester, counter)	144.03 MHz $\pm 50$ Hz
2. Modulation degree adjustment	VR303 (Main PCB)	Input a signal of 1 kHz/50 mV into the SP/MIC jack and adjust VR303 so that you obtain 4.7 kHz/Dev in the transmission mode.	4.7 kHz $\pm 0.2$ kHz
3. Subaudible tone	VR401 (RF Unit)	Set the subaudible tone to 114.8 Hz by DIP Switch and adjust VR401 so that you obtain 800 Hz/Dev.	800 Hz $\pm 50$ Hz
4. DTMF	VR601 (DTMF Unit)	Push [1] in the transmission mode and adjust VR601 so that you obtain 3 kHz/Dev.	3 kHz $\pm 500$ Hz

## 2. Receiving Unit

Item	Adjustment Point	Adjustment Method	Spec
1. VCO P/D voltage adjustment	L502 (VCO)	Adjust L502 so that P/D voltage is 0.5 V at 144.03 MHz. (DC voltmeter)	0.5 V $\pm 0.1$ V
2. RF Amp	L405, 406, 408 & 409 (RF PCB)	1 kHz, 3.5 kHz/Dev, $-6$ db $\mu$ (Meter direct-reading), 145.03 MHz, audio output 50 mW/8 $\Omega$ (Transceiver tester) Adjust L405, 406, 408 & 409 so that SINAD sensitivity becomes maximum.	$-6$ db $\mu$ Max.
3. Squelch Sensitivity	VR301 (Main PCB)	1 kHz, 3.5 kHz/Dev, $-8$ db $\mu$ (Meter direct-reading), 145.03 MHz (Transceiver tester) Turn VR301 counterclockwise from closed conditions and set to a point where the squelch is open.	$-8$ db $\mu$ $\pm 1$
4. S-meter adjustment	VR302 (Main PCB)	1 kHz, 3.5 kHz/Dev, $+17$ db $\mu$ (Meter direct-reading) Turn VR302 so that [FULL]-bar begins to light.	



# ■ BLOCK DIAGRAM



◀ COMMON  
 ◀ RX LINE  
 ▶ TX LINE

AF UNIT

MAIN UNIT

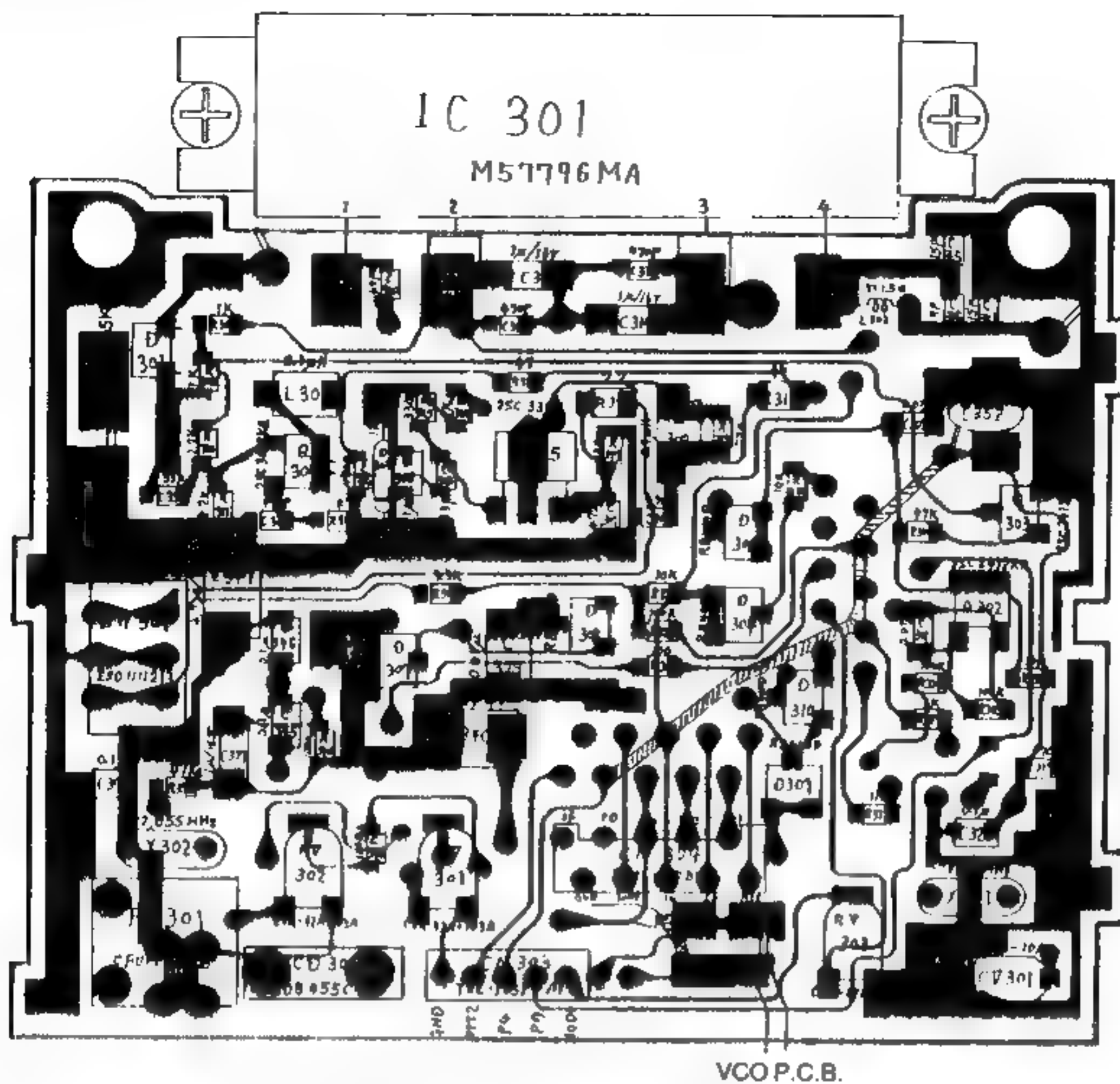
VCO UNIT

RF UNIT

Note: Values in ( ) show the values under transmission condition.

**Note:** Values in ( ) show the values under transmission condition.

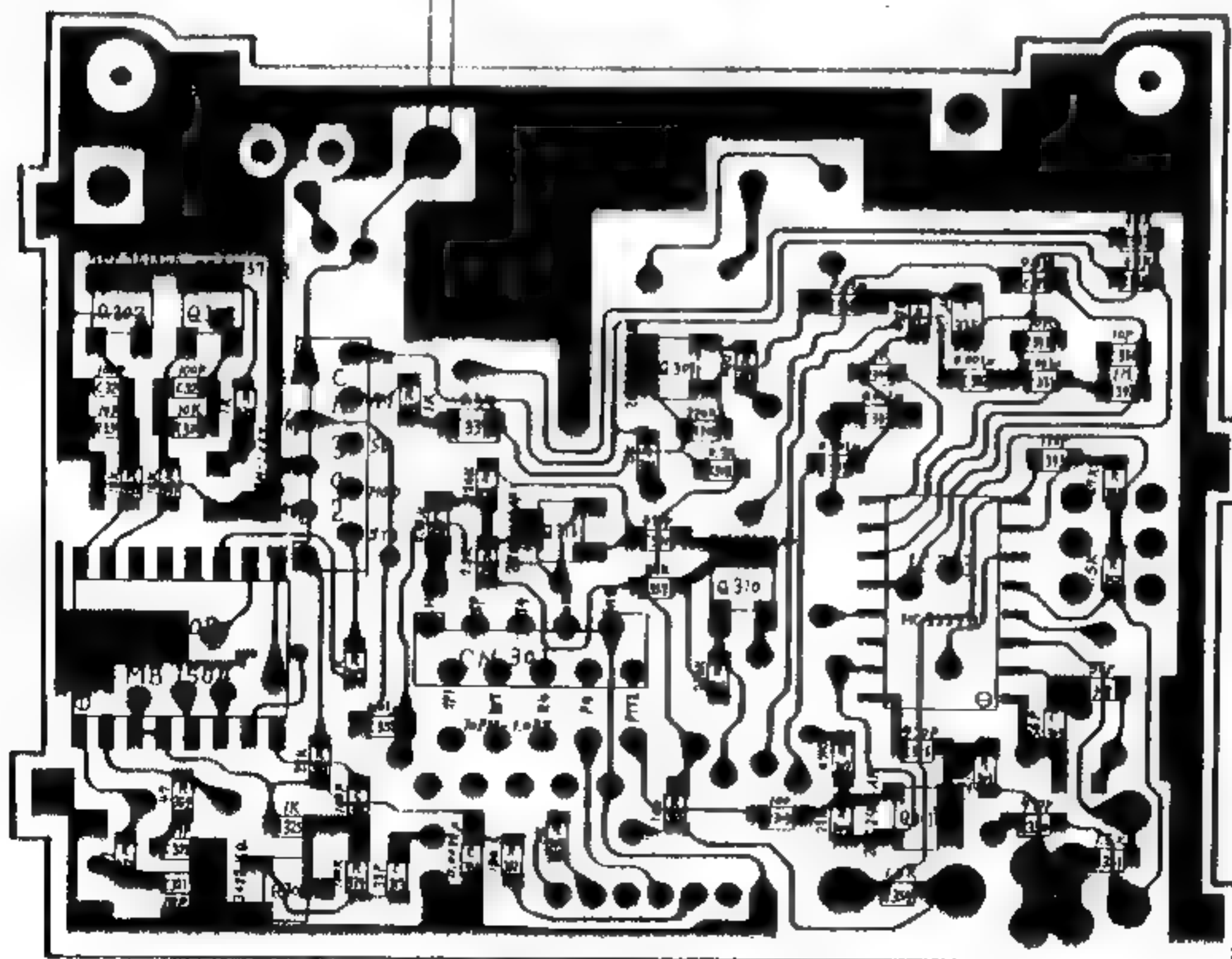




VCO P.C.B.

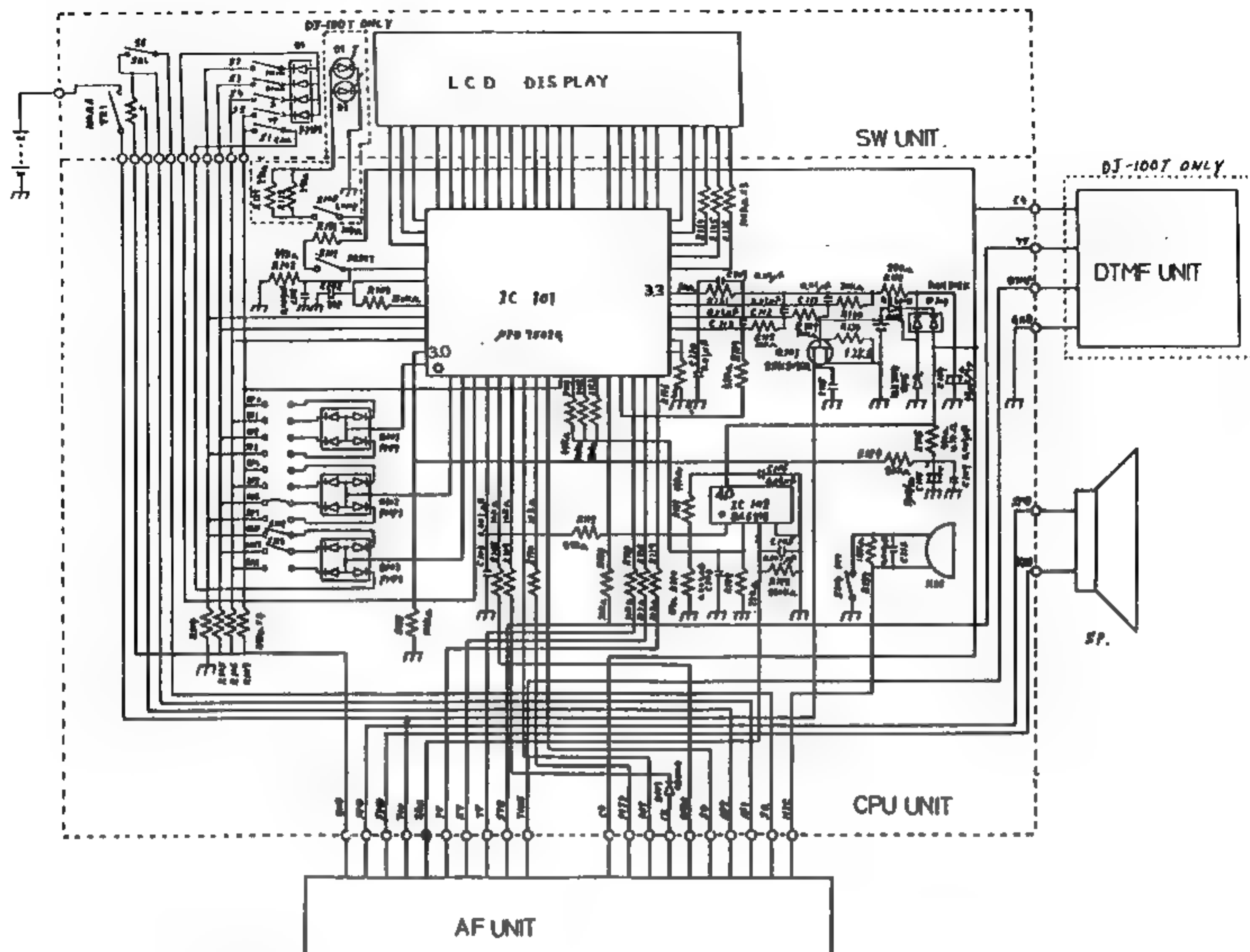
SW P.C.B.

**(Part)**

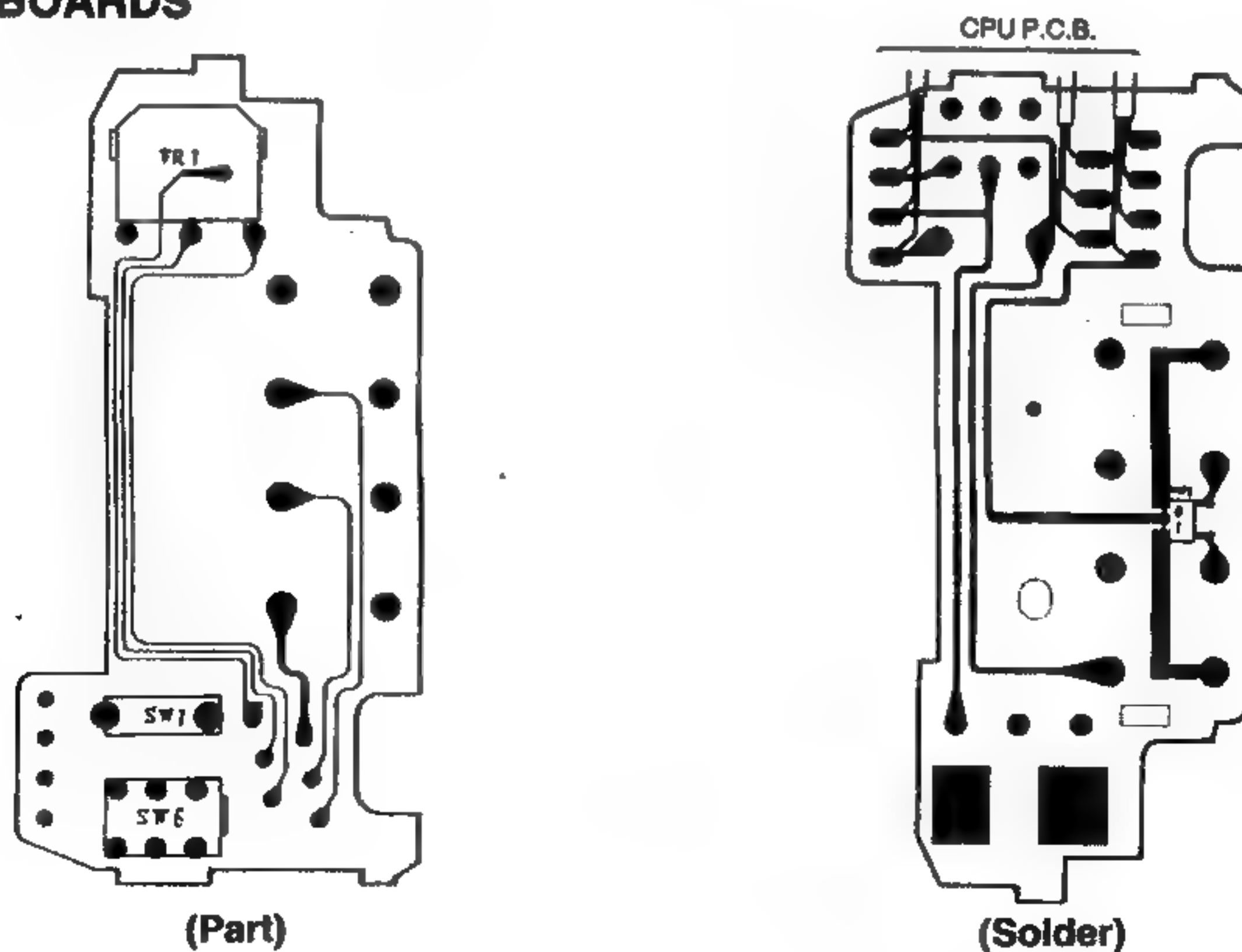


**(Solder)**

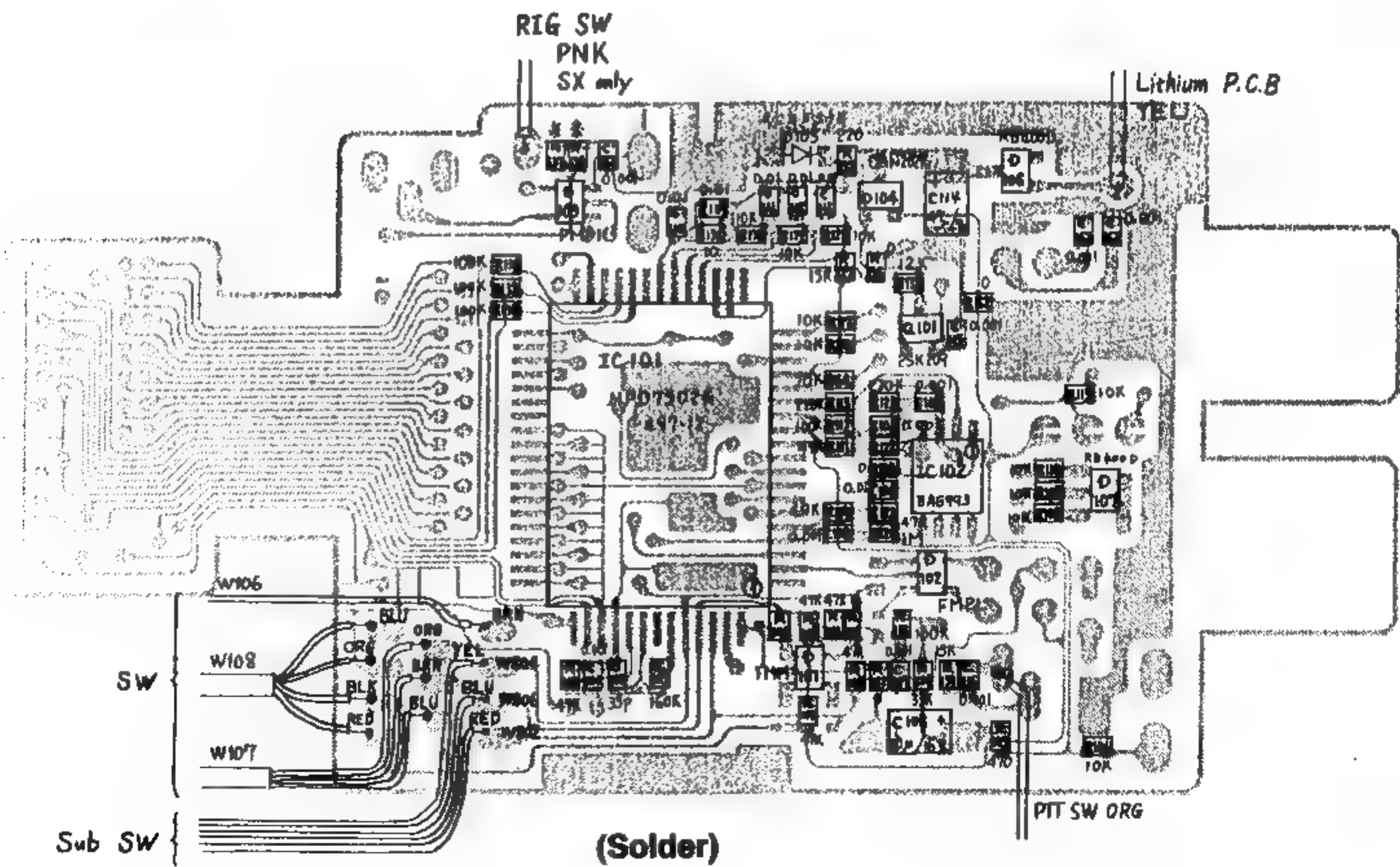
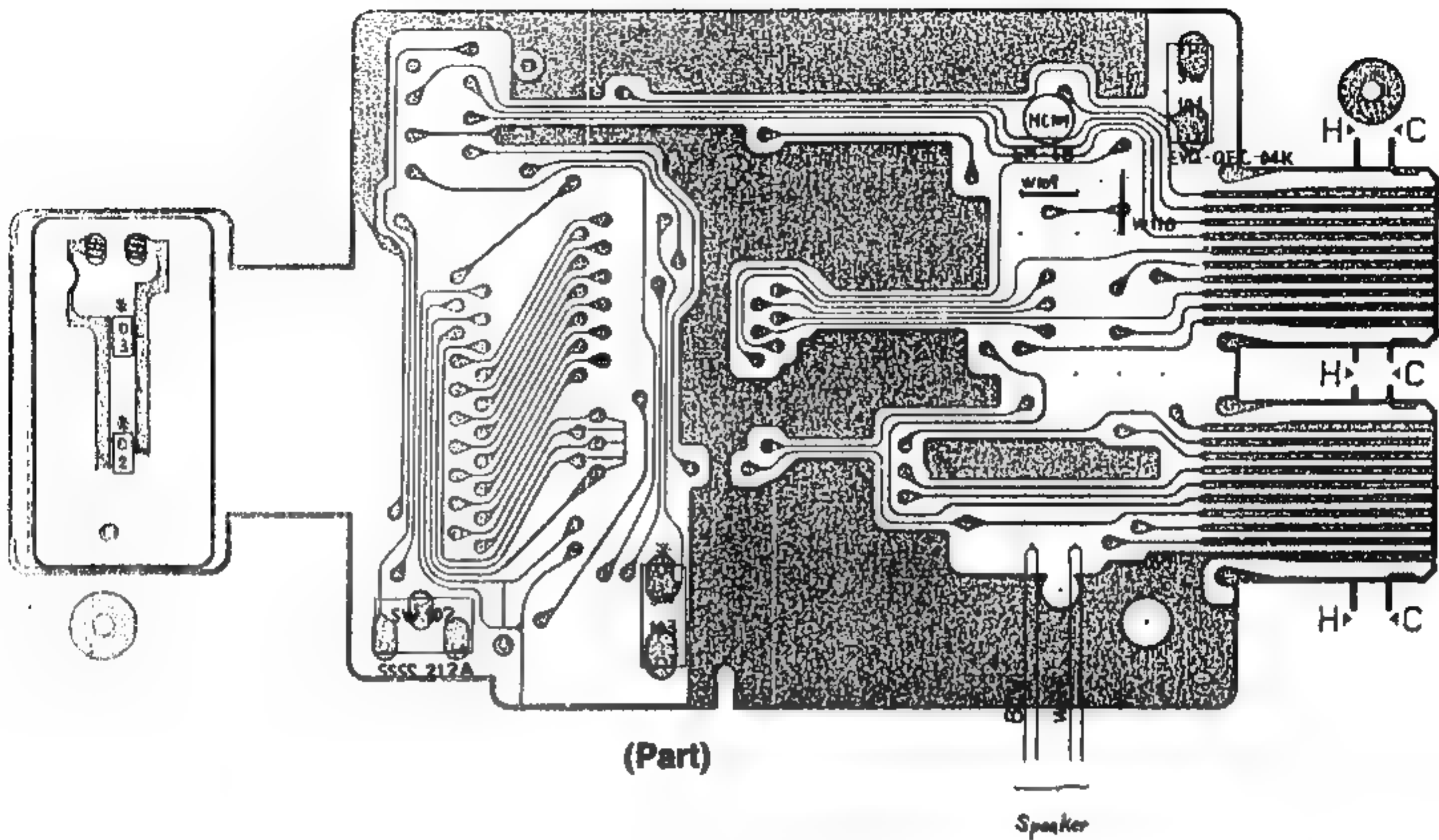
# ■ SCHEMATIC DIAGRAM OF CPU UNIT



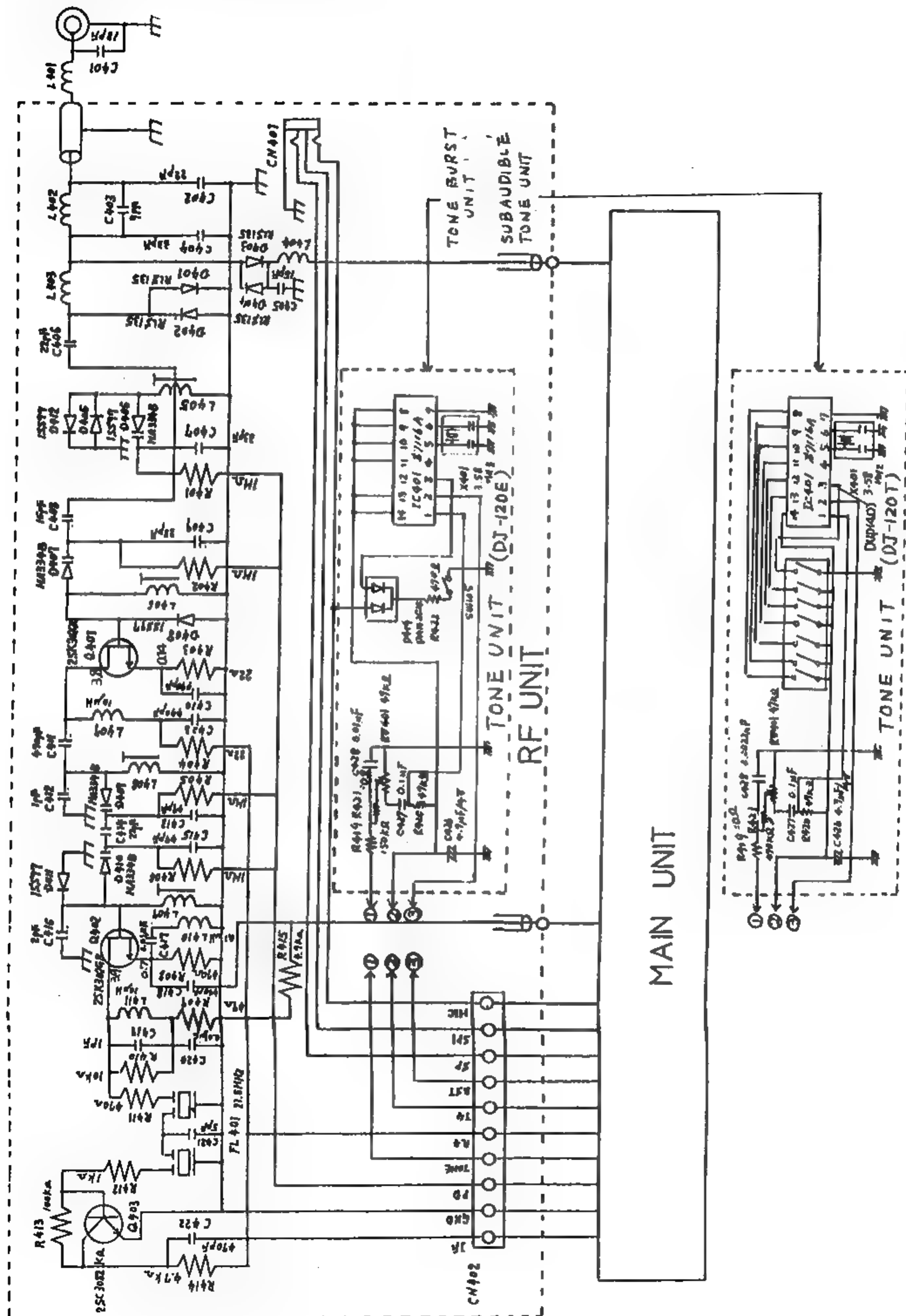
## ■ SW PC BOARDS





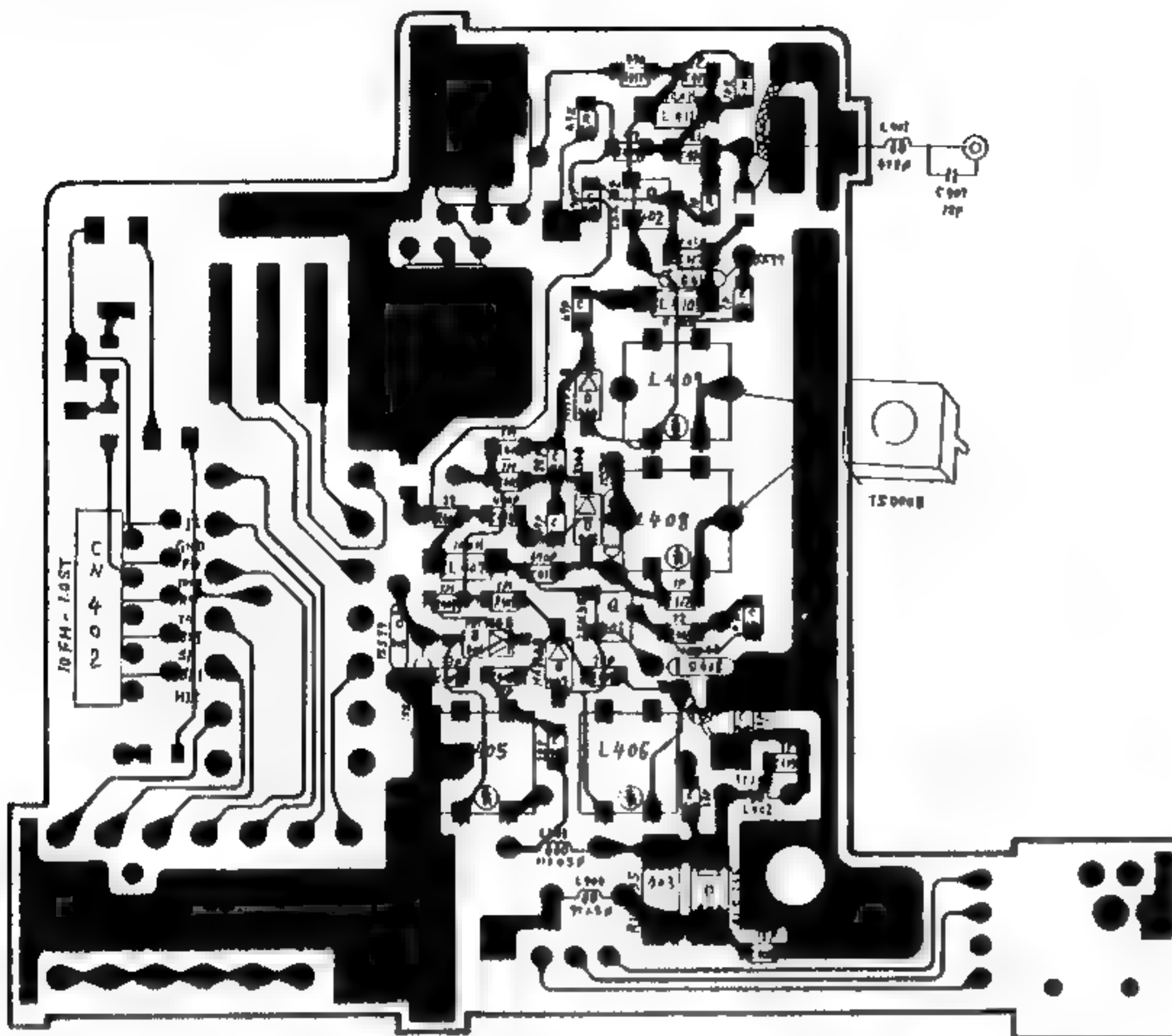


# ■ SCHEMATIC DIAGRAM OF RF UNIT

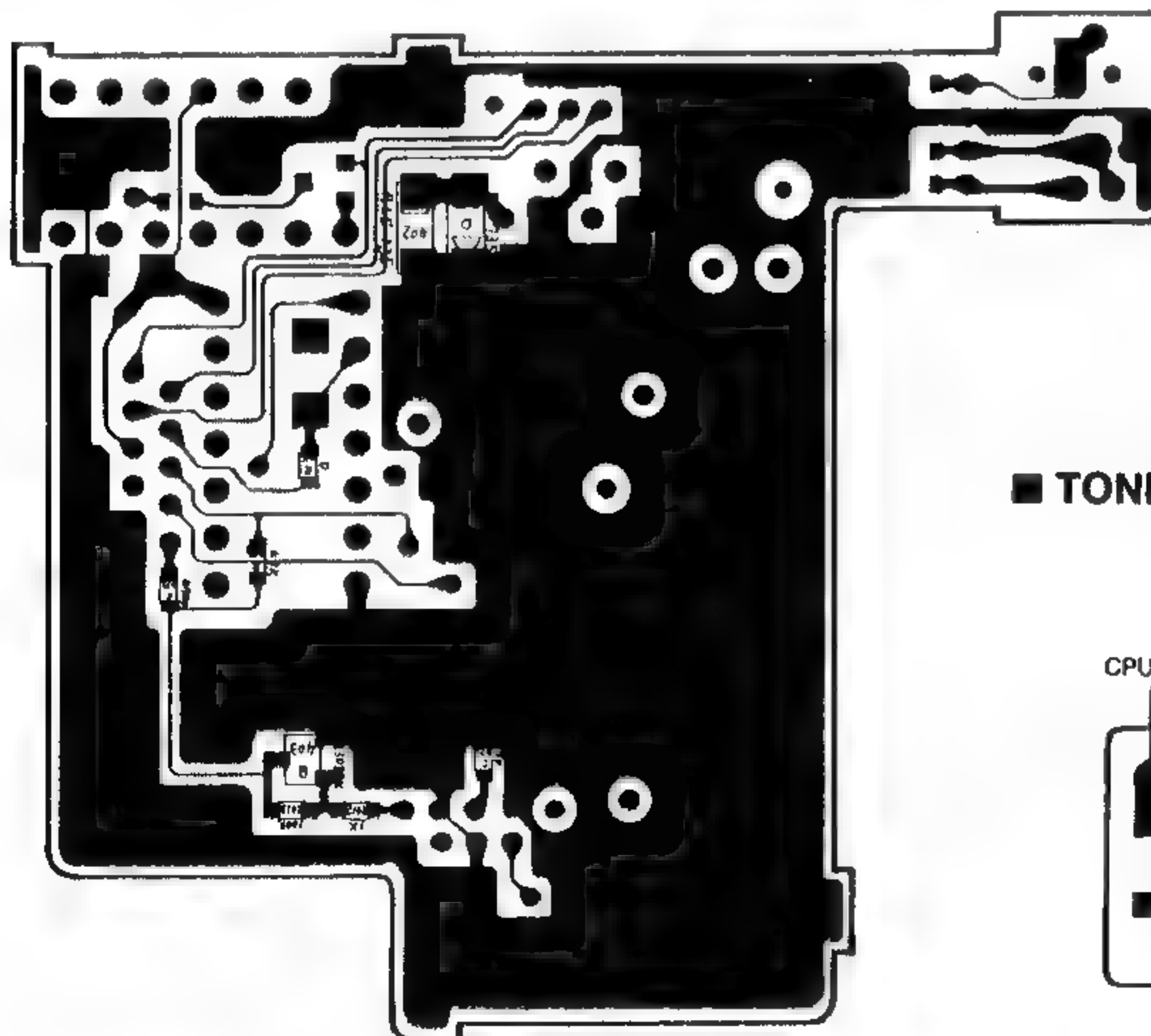




# ■ RF PC BOARDS

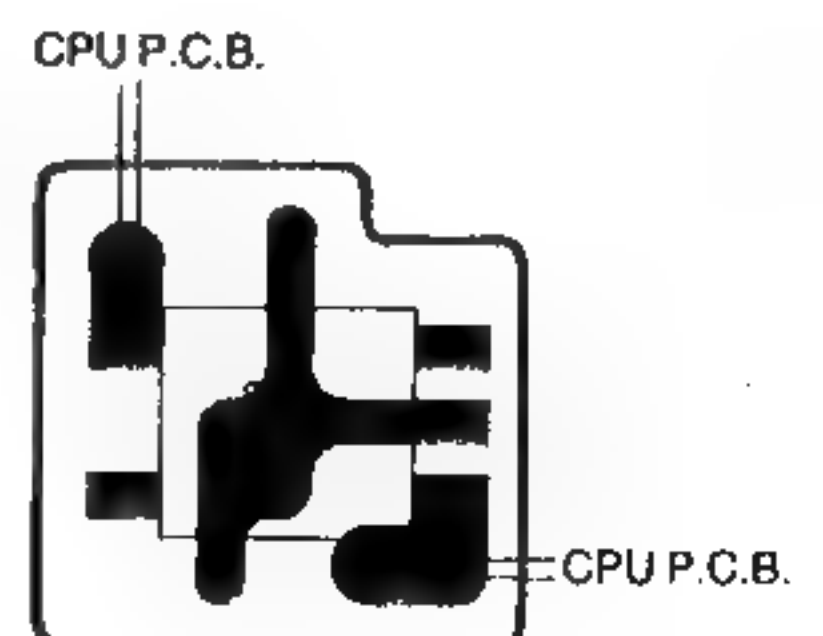


(Part)

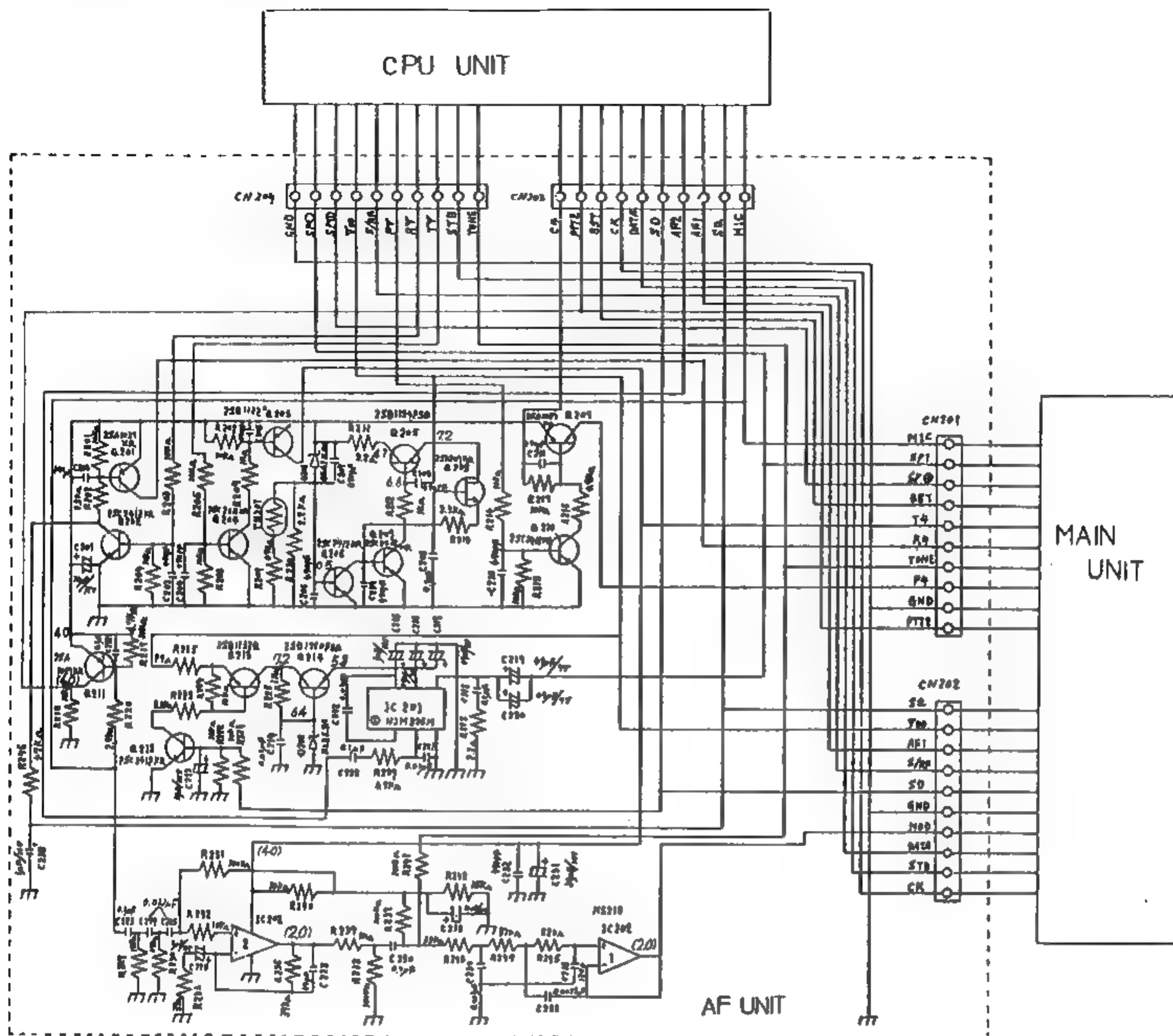


(Solder)

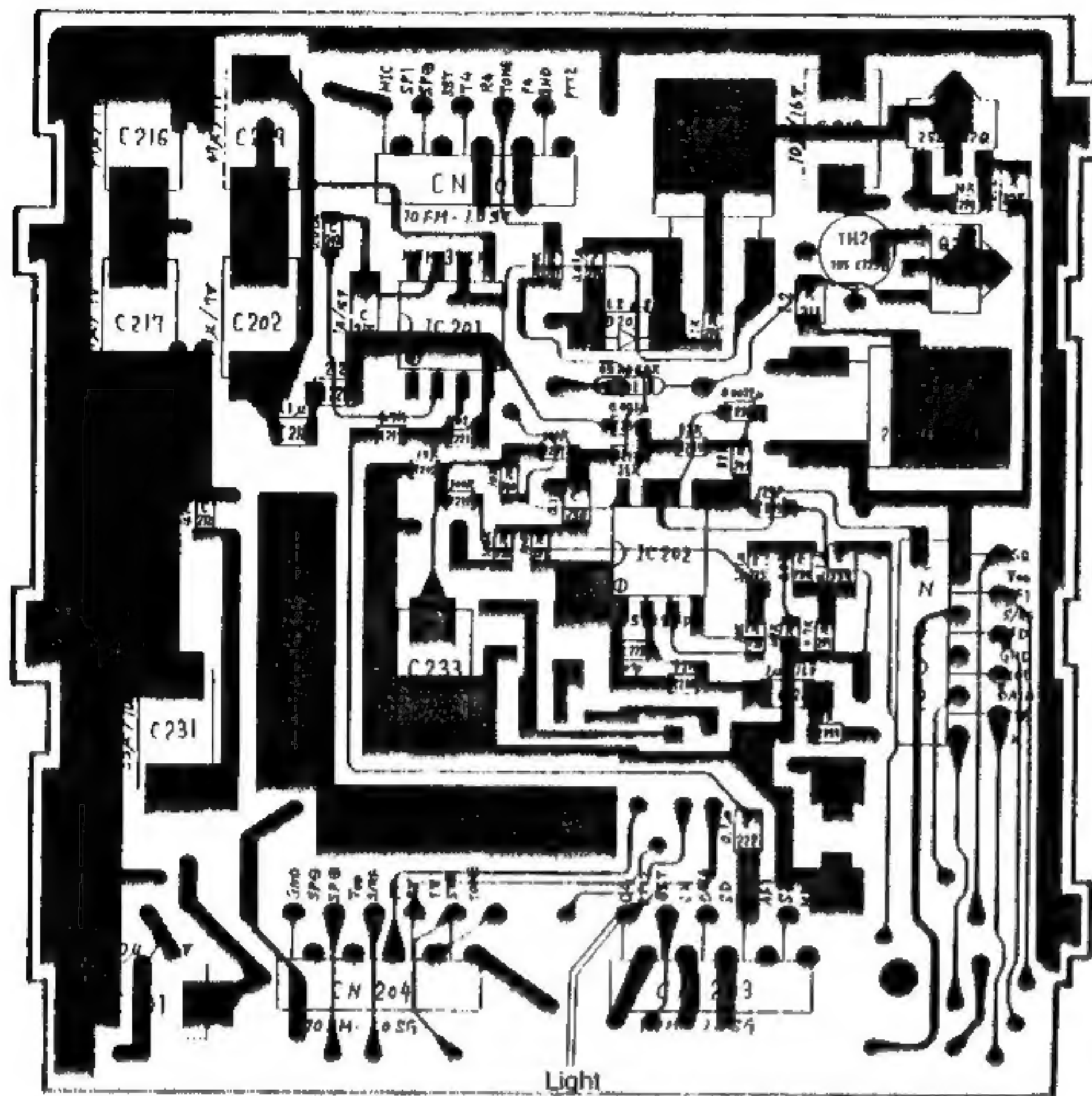
# ■ TONE SW PC BOARDS



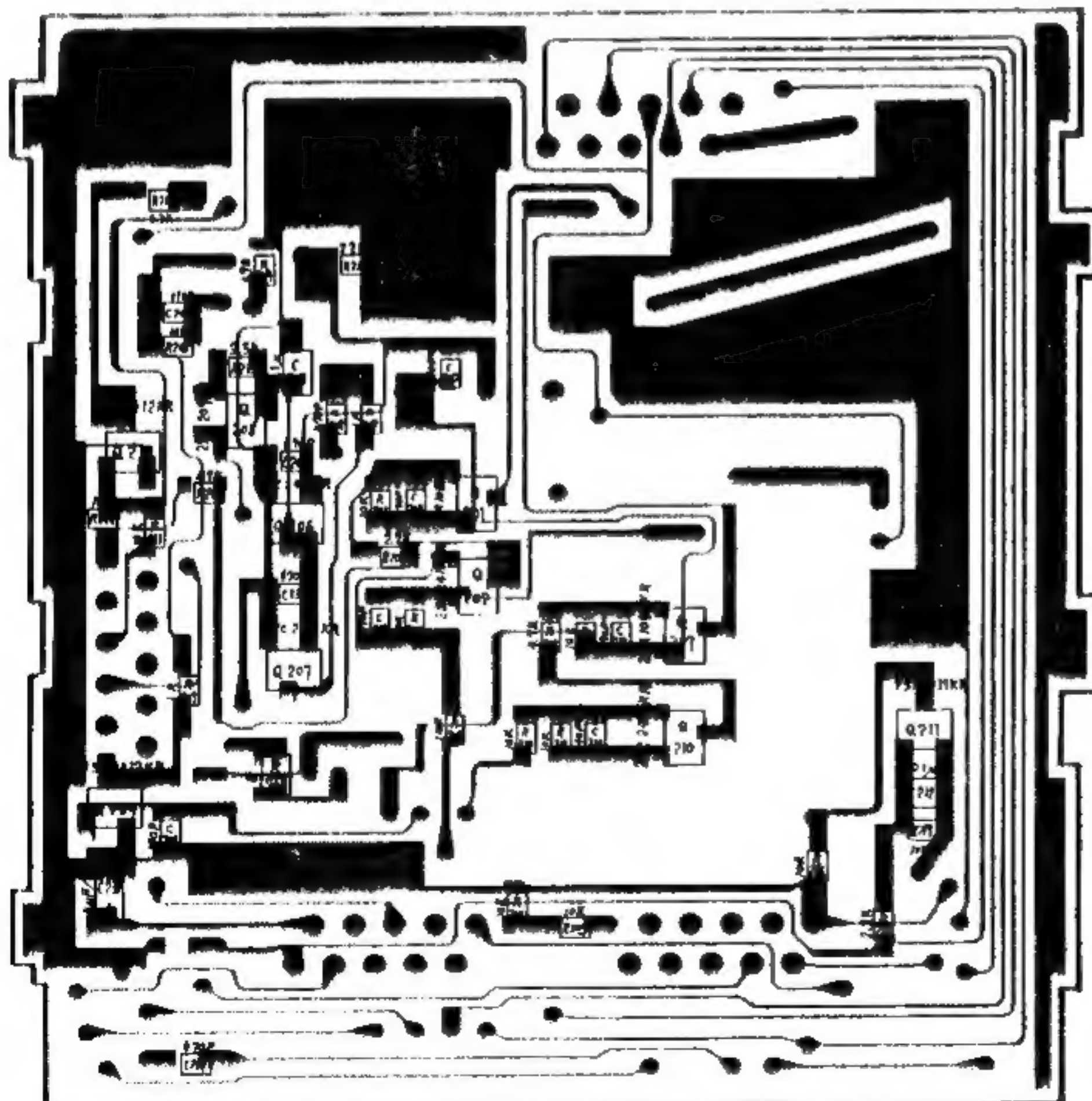
# ■ SCHEMATIC DIAGRAM OF AF UNIT





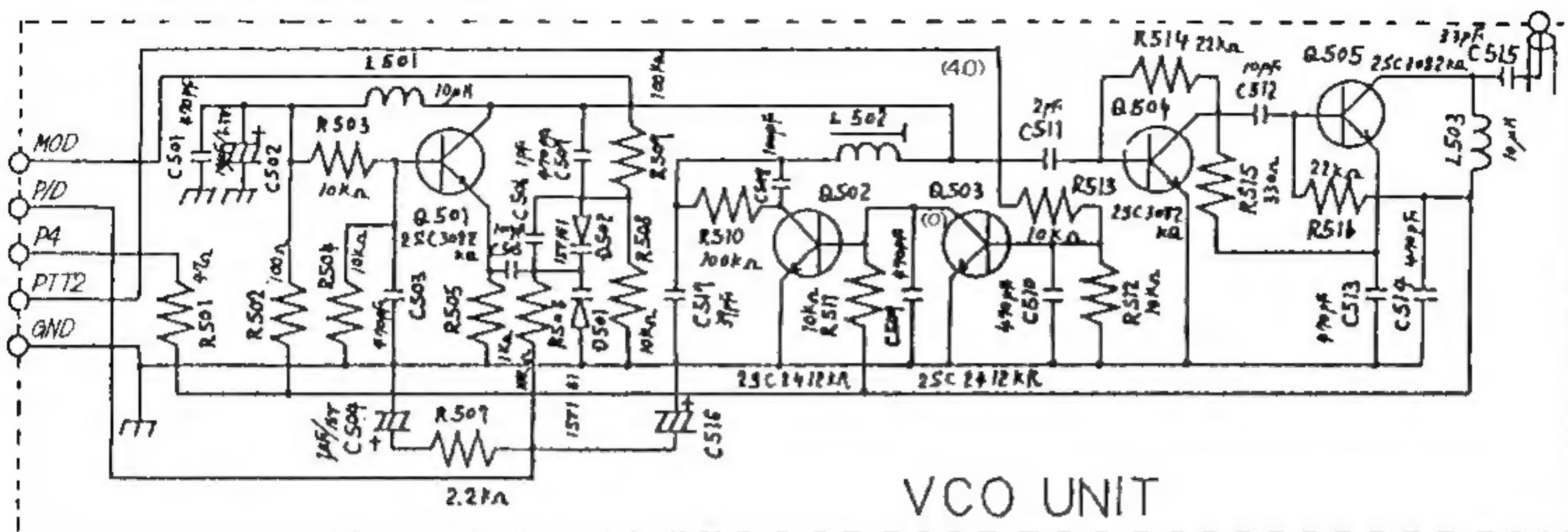


Light  
SW (Part)

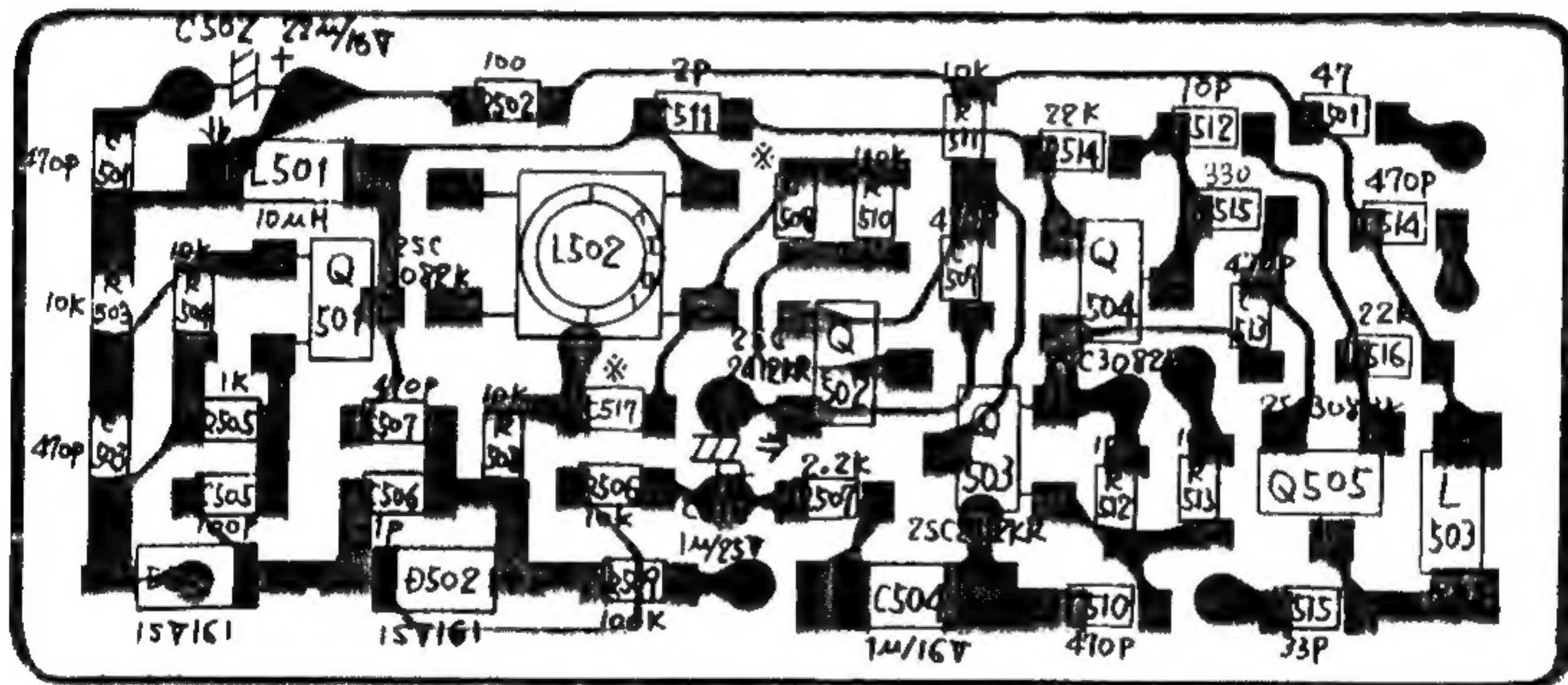


(Solder)

## ■ SCHEMATIC DIAGRAM OF VCO UNIT



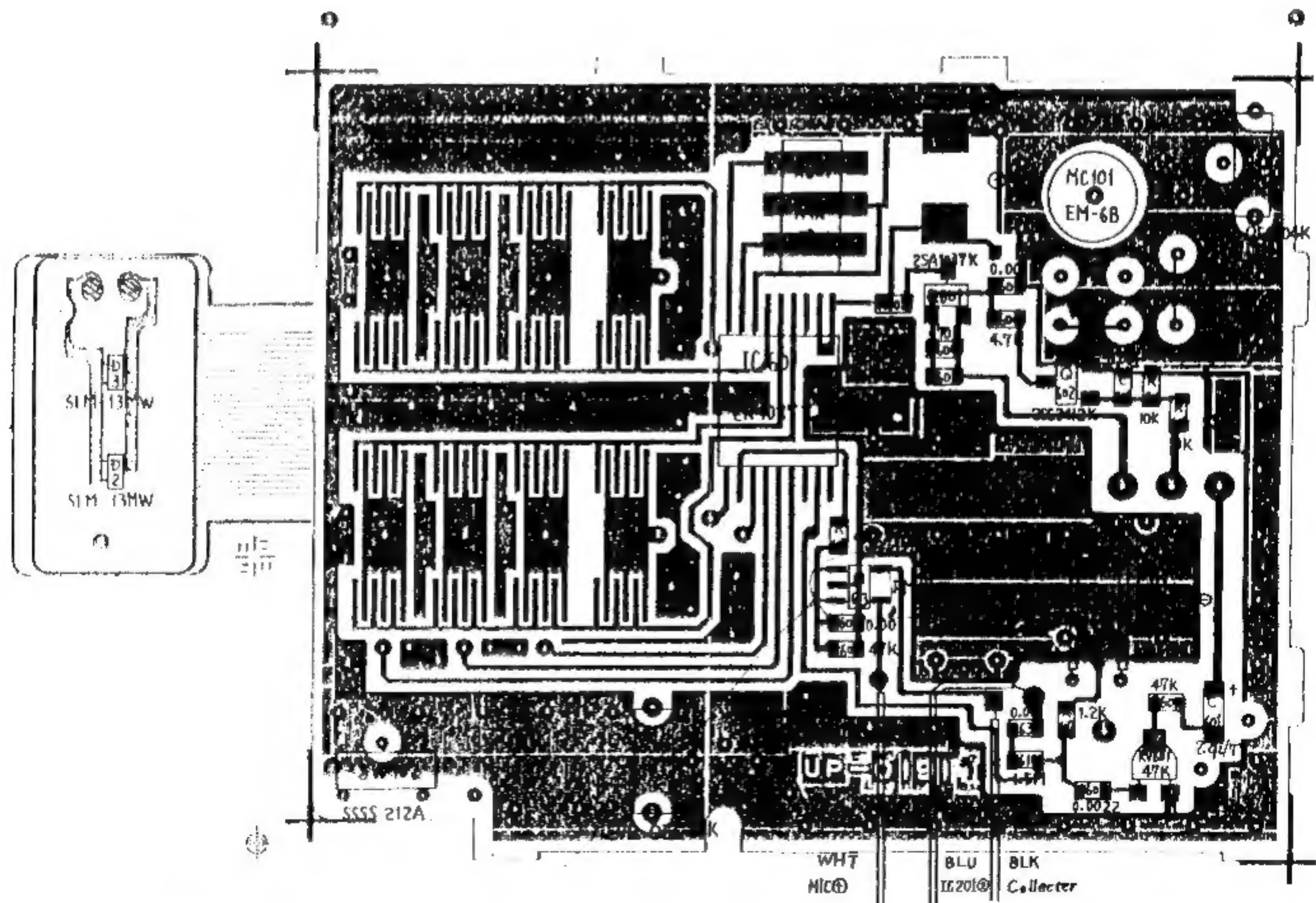
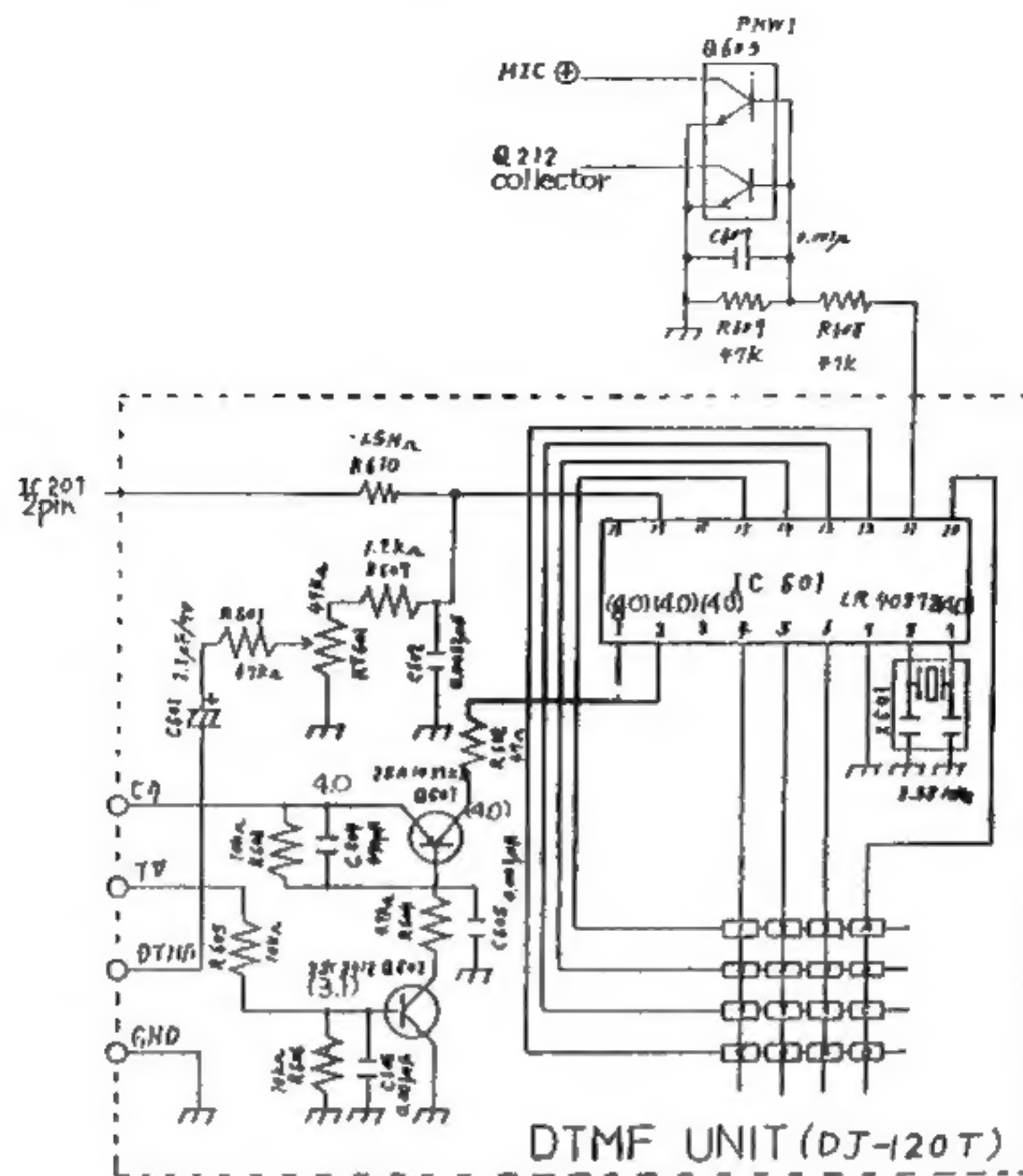
## ■ VCO PC BOARDS



(Parts)



### ■ SCHEMATIC DIAGRAM OF DTMF UNIT



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